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REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR THE MONTH OF JANUARY 1940

The Weather

The outstanding features were: remarkably strong winds at Salum (112 kilometres per hour on the 16th), thick mists in Cairo area on 21st and 22nd, and heavy rainfall at Alexandria on 27th and 28th.

At the beginning of the month a depression which was situated over the eastern Mediterranean deepened and caused rain and strong south-west winds along the coast. At Salum the velocity reached 98 kilometres per hour on the 3rd. Egypt then became an area of high pressure, and settled weather prevailed until the 8th, when a depression arriving north of Egypt gave rise to a short spell of rainy weather. The weather again became rainy and unsettled on the 13th, and on the following day there was a sharp fall in temperature and showers were general as far south as Cairo, while there was a moderate gale at Alexandria.

Conditions were disturbed to an unusual extent on the 16th during the passage of a depression along the eastern Mediterranean, southerly winds of exceptional violence being experienced. At Salum the velocity reached 112 kilometres per hour, while in Cairo the wind reached gale force, and caused considerable damage to trees; duststorms were widespread.

Subsequently the weather became much warmer, especially on the 18th and 19th, when the maximum temperature in Cairo rose to 26° C. compared with 16° C. on 14th. Morning mists were frequent, that in Cairo district on the 22nd being unusually dense and persistent. A depression moving eastwards off the coast on the 24th and 25th resulted in warm south-east winds in Egypt, but on its passage on the following day the arrival of westerly winds brought cool weather. Until the end of the month Egypt was under the influence of low pressure over the eastern Mediterranean, and the weather was generally showery and unsettled. The rain was particularly heavy at Alexandria, where 48 millimetres were registered on the 27th and 28th.

For the month as a whole the barometric pressure was abnormally low throughout Egypt and the Sudan, especially in Lower Egypt. Temperature was slightly above normal in most districts, while rainfall in Egypt was slightly below normal. There was rain at Alexandria on 10 days. Relative humidity in Alexandria and Cairo was below normal.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR JANUARY 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX. + MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean ...	1015.1	—3.4	18.9	+0.6	9.8	0.0	14.4	+0.3	31	— 5
II.—Lower Egypt ...	1016.1	—3.3	20.1	+0.2	6.1	—0.6	13.1	—0.2	12	— 4
III.—Middle Egypt ...	1016.7	—2.7	20.2	+1.2	7.7	0.0	14.0	+0.6	3	— 2
IV.—Upper Egypt ...	1017.3	—2.4	22.3	+1.0	6.8	—0.2	14.6	+0.4	drops	—
V.—Western Desert...	1018.4	—1.5	21.8	+0.6	4.0	—0.9	12.9	—0.2	drops	—
VI.—Red Sea (Egypt)	1016.1	—2.1	22.2	+0.5	11.1	+0.1	16.6	+0.3	0	— 1
VII.—Red Sea (Sudan)*	1014.8	—0.8	27.9	+0.8	19.7	—0.2	23.8	+0.3	4	— 3
VIII.—North Sudan ...	1014.7	—0.6	30.5	+0.5	13.0	0.0	21.8	+0.2	0	0
IX.—Central Sudan ...	1012.5	—0.8	33.6	+0.6	13.4	+0.5	23.5	+0.6	0	0
X.—South Sudan ...	1010.1	—0.9	36.5	+0.3	19.0	+0.5	27.8	+0.4	14	+10

\* Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

N.O.A.A  
U S Dep. of Commerce

# **National Oceanic and Atmospheric Administration**

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## State of the River

Lake Albert at Butiaba fell 40 centimetres during the month. Its level on February 1, 1940, was 21 centimetres below the normal and 67 centimetres below the corresponding day of last year.

The Bahr el Jebel at Juba fell at normal rate during the month. The levels were below both the normal and those of last year.

The River Sobat at Nasser fell at slower than normal rate, the level which was 129 centimetres below the normal at the beginning of the month was only 22 centimetres below it at its end. The levels were below the normal and considerably below last year's record throughout the month.

The White Nile at Malakal fell at nearly normal rate during the month. The levels were below normal and much below those of last year.

The Blue Nile at Roseires fell at normal rate. The levels, throughout the month, were above the normal but below last year's. At Khartoum the levels were throughout the whole month much below the normal and those of last year.

The Main Nile at Kajnarti fell at normal rate during the first 3 weeks of the month. During the last week the river fell more rapidly reaching a level at the end of the month 89 centimetres below the normal and 1.35 metres below that of last year. At Aswan the amount of water arriving the Reservoir was below both the normal and last year's supply.

The differences of the mean levels in January 1940 from those of January 1939 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	January 1940 minus January 1939	January 1940 minus Normal
	Metre	Metre
Juba ... ..	— 0.32	— 0.23
Nasser ... ..	— 3.09	— 0.63*
Malakal ... ..	— 1.79	— 0.52
Roseires ... ..	— 0.33	+ 0.35
Khartoum ... ..	— 0.70	— 0.39
Kajnarti ... ..	— 0.87	— 0.48

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\* Nasser normal is for 1922-35 only.

Y. M. SIMAIKA,  
Director, Hydrological Service.

## Ministry of Public Works, Egypt.—Physical Department.

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### REPORT ON THE WEATHER AND STATE OF THE RIVER FOR THE MONTH OF FEBRUARY 1940

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#### The Weather

Mild during the first and second weeks ; cool and unsettled during the third week.

For the first week a system of high pressure was situated over Egypt, the weather being generally fine and mild. In the Delta there were frequent morning mists. The day temperature in Cairo rose to a maximum of  $26^{\circ}\text{C}.$ , being  $5^{\circ}\text{C}.$  above normal, while the weather during the night was very cool, the minimum falling to  $2^{\circ}\text{C}.$  at Giza on the 4th, and the grass minimum to  $2^{\circ}\text{C}.$  below freezing point.

On the 8th, a depression appeared in the western desert near Siwa Oasis. Travelling very fast it crossed Egypt the same day, bringing warm weather. The maximum temperature registered at Helwan was  $27^{\circ}\text{C}.$ , being  $8^{\circ}\text{C}.$  above normal. Its passage was followed by strong northerly winds and an appreciable fall in temperature, while light showers occurred in Lower Egypt.

On the 10th, a complicated system of depressions extending from northern Italy to the Aegean Sea was moving east. Strong south-westerly winds prevailed throughout Lower Egypt, but only for a short period and there was no great effect on the weather.

On the 14th, Egypt fell under the influence of another complicated system of depressions situated over the central Mediterranean. During its approach, very strong south-east winds prevailed, with sandstorms in the western desert. The weather was generally mild, the temperature in Cairo on the 16th rising to  $28^{\circ}\text{C}.$ , or  $7^{\circ}\text{C}.$  above normal. A solar halo of  $22^{\circ}$  radius was seen in Cairo on that afternoon. On the passage of the system to the east, a well-defined cold front traversed Egypt, causing a sharp fall in temperature. Rain fell in the western desert, though not at the observing stations. Strong westerly winds prevailed, reaching at Salum a velocity of 83 kilometres per hour.

After two days of settled weather a deep depression arrived north of Egypt on the 19th, and moved rapidly eastwards. Warm southerly winds of gale force quickly sprang up over Lower Egypt, and severe sandstorms occurred. At Salum the wind reached a velocity of 87 kilometres per hour. The visibility at Matruh decreased at one period to less than fifty metres on account of the sand in the air. By the following day the depression had passed to Syria and the arrival of the north-westerly winds in Egypt brought an appreciable fall in temperature, with light rain on the coast. The depression deepened considerably on the 22nd, causing winds of gale force and rough seas throughout the Eastern Mediterranean. At Alexandria a velocity of 81 kilometres per hour from the west was recorded, and the same velocity was attained at Salum. The storm continued with greater severity ; on the following day the wind veered to the north on the coast and attained a velocity of 86 kilometres per hour at Salum. These cold northerly winds later caused widespread rain in Lower Egypt ; at Alexandria 24 millimetres were registered on the 23rd, and 10 millimetres, on the next day.

The weather was abnormally cool for three successive days commencing the 23rd the maximum temperature registered in Cairo during this period did not exceed  $19^{\circ}\text{C}.$  ( $66^{\circ}\text{F}.$ ), or  $4^{\circ}\text{C}.$  below normal.

The weather became settled on the 26th and continued mild and fine for 3 days. On the last day of the month a depression developed over the northern Red Sea causing fresh north-east winds to prevail over Middle and Upper Egypt ; meanwhile a shallow depression was situated off Matruh. Heavy showers in the western desert resulted ; at Baharia Oasis 14 millimetres were recorded, while there were showers also at Kharga and Dakhla Oases

For the month as a whole barometric pressure was everywhere below normal, though not by large amounts. Temperature was above normal in all districts. Rainfall was everywhere below normal.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR FEBRUARY 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX. + MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean ...	1016.0	—0.7	20.3	+1.4	11.2	+0.8	15.8	+1.1	18	— 6
II.—Lower Egypt ...	1016.6	—0.2	21.7	+1.1	7.6	+0.6	14.6	+0.8	6	— 6
III.—Middle Egypt ...	1016.8	—0.8	22.4	+1.7	9.1	+0.8	15.8	+1.2	1	— 2
IV.—Upper Egypt ...	1017.2	—0.6	24.6	+1.3	8.8	+0.8	16.7	+1.0	drops	—
V.—Western Desert...	1018.1	—0.4	23.8	+0.4	6.6	+0.6	15.2	+0.5	drops	—
VI.—Red Sea (Egypt)	1016.0	—0.3	23.4	+1.0	12.1	+0.8	17.8	+0.9	drops	— 1
VII.—Red Sea (Sudan)*	1014.0	—0.7	28.5	+1.3	20.3	+1.2	24.4	+1.2	drops	— 3
VIII.—North Sudan ...	1014.2	+0.1	32.1	+0.3	13.9	+0.1	23.0	+0.2	0	0
IX.—Central Sudan ...	1012.0	—0.1	34.7	0.0	15.0	+0.9	24.8	+0.4	0	0
X.—South Sudan ...	1010.0	0.0	36.9	—0.5	20.9	+0.9	28.9	+0.2	8	+ 1

\* Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba rose only 2 centimetres during the month. Its level on March 1st, 1940, was 8 centimetres below the normal and 52 centimetres below that of the corresponding day of last year.

The Bahr el Jebel at Juba was practically steady throughout the whole month. The levels were below both the normal and those of last year.

The River Sobat at Nasser, with the exception of the last week of the month, during which a slight fall set in, was almost steady throughout. The levels were in general little above the normal but much below those of last year.

The White Nile at Malakal fell at a slower rate than normal. The level which was 37 centimetres below normal at the beginning of the month was only 4 centimetres below it at its end, the levels were about half a metre below last year's. At Jebel Aulia, the emptying of the reservoir started on the 3rd, and D.S. gauges began to rise steadily till the 10th, and then remained almost steady to the end of the month.

The Blue Nile at Roseires fell at normal rate, the levels were above normal but below those of last year throughout. At Khartoum, the levels were affected by the emptying of Jebel Aulia, and showed almost the same features as those D.S. the dam.

The Main Nile at Kajnarti fell at nearly normal rate for the first 17 days of the month when the levels were on the average about 80 centimetres below normal and about 1·50 metres below the corresponding levels of last year. This was however followed by a rapid and steady rise bringing the level to normal on the 22nd and then remained almost steady till the end of the month. At Aswan, the flush due to the contribution of Jebel Aulia raised the amount of water reaching the Reservoir to about 80 millions cubic metres per day by the end of the month.

The differences of the mean levels in February 1940 from those of February 1939 and from the normal 1906–1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	February 1940 minus February 1939	February 1940 minus Normal
	Metre	Metre
Juba ... ..	— 0·29	— 0·22
Nasser ... ..	— 0·44	+ 0·15 *
Malakal ... ..	— 0·85	— 0·19
Roseires ... ..	— 0·35	+ 0·27
Khartoum ... ..	— 0·35	+ 0·12
Kajnarti ... ..	— 1·33	— 0·58

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\* Nasser normal is for 1922-35 only.

Y. M. SIM'

Director, P

**REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR THE MONTH OF MARCH 1940**

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**The Weather**

Changeable, with two cool periods and an unusually warm spell.

On the 3rd of the month mild southerly winds prevailed, but with westerly winds replacing them on the following day, the weather became much cooler.

The passage of a vigorous secondary along the Mediterranean coast of Egypt caused strong southerly winds on the coast, the velocity at Salum reaching 110 kilometres per hour on the 6th. On the following day southerly winds prevailed throughout Egypt, and strengthened. The weather became much warmer, while severe sandstorms occurred in the western desert, visibility in places being below 50 metres for considerable periods. At Salum the wind velocity reached 130 kilometres per hour. This is the highest velocity on record for the wind near ground level at any place in Egypt. By the 8th the depression had reached Syria, and with north-westerly winds traversing Egypt, a spell of cool weather began and lasted for a week. This coincided with the beginning of the traditional cold spell of Bard el Aguz (1–10 Baramhat, 10–19 March). The temperature in Cairo on the 11th did not exceed 18° C. (64° F.) compared with the normal value of 24° C. (75° F.), while five days previously it was 29° C. (84° F.). In the early mornings of 11th to 14th there were ground frosts at Giza; the grass minimum on the 12th was –3° C.

After the 11th temperatures gradually rose, reaching the normal by the middle of the month. With the advance of a depression along the eastern Mediterranean, the weather in Egypt continued to become steadily warmer until the 18th, on which morning thick mists occurred throughout Lower Egypt.

By the following day the depression had passed Cyprus. Strong westerly and north westerly winds traversed Egypt, reaching gale force in many places; the maximum velocities recorded at Salum, Alexandria and Helwan were 110, 80, and 75 kilometres per hour respectively. The weather became very cool and heavy showers were general throughout Lower Egypt.

The cool spell lasted for a week, but from the 26th Egypt came under the influence of a system of depressions situated over the Mediterranean. Winds were mainly southerly, and weather was of the Khamsin type. Throughout most of Lower Egypt the temperature on the 29th and 30th rose to 35° C. (95° F.) or 10° C. above the normal.

For the month as a whole the atmospheric pressure was everywhere much above normal, while except on the Mediterranean coast, the temperature was slightly below normal in Egypt, and well below normal in the Sudan. Rainfall in Egypt was about normal.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR MARCH 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	n.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean ...	1017.1	+1.2	21.9	+1.2	12.5	+0.2	17.2	+0.7	11	— 1
II.—Lower Egypt ...	1017.7	+1.3	23.5	—0.4	8.8	—0.2	16.2	—0.3	8	+ 1
III.—Middle Egypt ...	1017.7	+1.3	24.4	+0.2	10.0	—0.5	17.2	—0.2	4	0
IV.—Upper Egypt ...	1017.2	+1.4	27.1	—0.8	10.8	—0.2	19.0	—0.5	1	—
V.—Western Desert...	1018.4	+1.6	26.8	—0.8	9.2	—0.6	18.0	—0.7	drops	—
VI.—Red Sea (Egypt)	1015.9	+1.3	24.3	—0.6	13.2	—0.9	18.8	—0.8	1	+ 1
VII.—Red Sea (Sudan)*	1013.7	+0.9	28.8	+0.1	18.6	—1.1	23.7	—0.5	24	+22
VIII.—North Sudan ...	1013.7	+2.1	33.4	—2.3	15.5	—1.4	24.4	—1.8	0	0
IX.—Central Sudan ...	1011.3	+1.5	35.9	—1.8	15.7	—1.4	25.8	—1.6	0	— 1
X.—South Sudan ...	1009.4	+0.3	37.3	—0.8	21.4	—0.1	29.4	—0.4	11	—10

\* Port Sudan only.

L. J. SUTTON,  
*Director, Meteorological Service.*



## State of the River

Lake Albert at Butiaba fell 16 cms. during the month. Its level on April 1, 1940, was 15 cms. below the normal and 62 cms. below the corresponding day of last year.

With the exception of the period between the 17th and the 21st, during which the Bahr el Jebel showed a slight rise, the levels were almost steady during the whole month. The levels were, throughout, below both the normal and those of last year.

The River Sobat at Nasser fell rapidly during the first fortnight, and slower thereafter showing almost steady levels towards the end of the month. The level which was 29 cms. above the normal at the beginning of the month was 23 cms. below it at its end. The levels were on general much below those of last year.

The White Nile at Malakal fell almost identically with the normal during the whole month. The levels were 30 cms. below those of last year throughout. At Gebel Aulia, the D.S. levels were maintained almost steady till the 22nd and fell gradually thereafter to the end of the month.

The Blue Nile at Roseires fell at almost normal rate, the levels were little above the normal but much below last year's. At Khartoum the variations of levels were almost identical with those of the levels D.S. Gebel Aulia.

The Main Nile at Kajnarti fell slightly during the month and were continuously above the normal. The level which was 80 cms. below that of the last year at the beginning of the month was 33 cms. above it at its end. At Aswan the amount of water which arrived the Reservoir during the whole month was lamost equal to that of last year and about 25 per cent in excess of the normal supply.

The differences of the mean levels in March 1940 from those of March 1939 and from the normal 1906-1935 were:—

STATION	MEAN DIFFERENCES OF LEVELS	
	March 1940 minus March 1939	March 1940 minus Normal
	Metre	Metre
Juba ... ..	— 0·23	— 0·20
Nasser ... ..	— 0·33	+ 0·03 *
Malakal ... ..	— 0·30	— 0·03
Roseires ... ..	— 0·36	+ 0·18
Khartoum ... ..	+ 0·06	+ 0·23
Kajnarti ... ..	+ 0·01	+ 0·40

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\* Nasser normal is for 1922-35 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

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**Ministry of Public Works, Egypt.—Physical Department.**

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**REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR THE MONTH OF APRIL 1940**

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**The Weather**

Changeable, and rather warm.

At the beginning of the month, when a trough of low pressure extended from Upper Egypt to Cyprus, the weather was very disturbed. The temperature fell considerably, while rainstorms and thunderstorms were experienced throughout Egypt as far south as Asyut. On the 5th Egypt came under the influence of depressions situated over the central Mediterranean, giving rise to southeasterly winds, and the weather became steadily warmer. The wind strengthened, reaching a velocity of 100 kilometres per hour at Salum on the 7th. At many places in Egypt the temperature reached 37°C (99°F) on the 9th. The depressions passed in the course of that day, and with the veering of the wind to the northwest the weather rapidly became much cooler. •

On the 11th a shallow depression developed over Sinai, the winds blew from the north-east, and light thunderstorms occurred in Middle Egypt. On the following day a depression appeared in the Libian desert; during its approach the pressure in Egypt fell rapidly and was disturbed to an unusual degree. Warm easterly and southerly winds prevailed.

The temperature on the 13th reached 36°C (97°F) in several localities, and a light thunderstorm occurred in Cairo district in the evening. The depression passed over Lower Egypt during the night, when the weather was very oppressive. In Cairo the temperature throughout the night of 13–14th did not fall below 24°C (75°F); this was the warmest night in April at least since records began at Ezbekia in 1902. The depression passed in the morning, and the arrival of the cooler air from the west was marked by strong gales (reaching 100 kilometres per hour at Salum), and widespread sandstorms, especially severe in the western desert, where the visibility at times did not exceed 50 metres. Showers occurred along the coast and in the Delta, and cool weather prevailed for several days.

On the 21st a depression appeared near Benghazi causing warm easterly winds in Egypt for two days, with light thunderstorms on the coast. Following its passage the weather became cooler and unsettled. Heavy rain fell in eastern Egypt on the 23rd, accompanied in places by hail and thunderstorms. At Helwan 10 millimetres fell, while at Zagazig the amount reached 23 millimetres, a record there for any day in April for at least 28 years. At Faqus 21 millimetres were registered. Considerable damage to roads was done over a large area. After a few days of cool weather, the passage of a depression from the Libian desert across western Egypt and the Delta on the 27th and 28th gave rise to warm easterly winds and khamsin conditions of moderate intensity.

For the month as a whole the barometric pressure was slightly below normal in all districts except the Red Sea and the northern Sudan. The temperature was everywhere above normal. Rainfall in Egypt was above normal, as also in the central and southern Sudan.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR APRIL 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean ...	1014.0	—0.3	24.0	+0.8	15.1	+0.5	19.6	+0.6	2	— 1
II.—Lower Egypt ...	1014.4	—0.2	27.8	0.0	12.8	+1.0	20.3	+0.5	5	+ 2
III.—Middle Egypt ...	1014.2	—0.2	29.0	+0.6	14.6	+1.3	21.8	+1.0	6	+ 4
IV.—Upper Egypt ...	1013.4	—0.1	32.6	0.0	16.4	+1.2	24.5	+0.6	3	—
V.—Western Desert...	1014.5	—0.1	32.1	—0.3	14.6	+0.8	23.4	+0.2	0	—
VI.—Red Sea (Egypt)	1012.6	+0.3	28.2	+0.1	18.0	+0.7	23.1	+0.4	2	+ 2
VII.—Red Sea (Sudan)*	1011.3	+0.2	32.0	+0.4	22.8	+1.4	27.4	+0.9	0	— 1
VIII.—North Sudan ...	1009.7	+0.4	39.8	+0.3	22.0	+1.4	30.9	+0.8	1	0
IX.—Central Sudan ...	1007.8	—0.2	40.7	+0.6	21.7	+1.4	31.2	+1.0	6	+ 1
X.—South Sudan ...	1008.6	—0.6	37.3	+0.1	24.4	+1.9	30.8	+1.0	85	+13

\* Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba was steady during the month. Its level on May 1st, 1940 was 14 cms. below the normal and 62 cms. below the corresponding day of last year.

During the first fortnight, the Bahr el Jebel at Juba was almost steady and the levels were below both the normal and last year's. During the second fortnight the levels experienced some sharp rises and falls the average of which corresponded to normal but below last year's levels.

The River Sobat at Nasser continued to fall slightly below normal and last year's levels until the ninth. It then rose steadily and nearly reached the normal on the 22nd. A steady fall then set in, till the end of the month. The levels in general were below normal and much below those of last year.

The White Nile at Malakal fell slightly during the first half of the month and rose during the second. The levels were almost identical with the normal but much below those of last year. At Gebel Aulia, the D.S. levels fell steadily during the whole month.

The Blue Nile at Roseires showed a slight rise during the first week of the month, but fell gradually thereafter. The levels were a little above normal but much below those of last year. At Khartoum the levels reflected the features experienced at D.S. Gebel Aulia.

The Main Nile at Kajnarti fell rapidly during the whole month. The level which was 64 cms. above the normal at the beginning of the month was 33 cms. below it at its end. The levels on the average were more than half a metre below those of last year. At Aswan the amount of water arriving the Reservoir at the beginning of the month was about 20 Millions M.<sup>3</sup> above the normal value, but became almost normal by the end of the month.

The differences of the mean levels in April 1940 from those of April 1939 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	April 1940 minus April 1939	April 1940 minus Normal
	Metre	Metre
Juba ... ..	— 0·26	— 0·16
Nasser ... ..	— 0·62	— 0·33 *
Malakal ... ..	— 0·38	— 0·07
Roseires ... ..	— 0·45	+ 0·06
Khartoum ... ..	— 0·66	— 0·37
Kajnarti ... ..	— 0·54	+ 0·11

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\* Nasser normal is for 1922-35 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

# Ministry of Public Works, Egypt. Physical Department.

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR THE MONTH OF MAY 1940

### The Weather

As is usual during May, a succession of heat waves occurred, but they were confined to the first part of the month and the temperatures reached were lower than usual for *khamsein* weather at this time of year.

Early in the month a small depression traversed Egypt from the Western Desert causing warm easterly winds and *khamsein* conditions. The temperature in Cairo rose to 40°C (104°F) on the 5th, but by the following day the depression had reached Palestine, and northwesterly winds being established in Egypt brought a considerable fall in temperature, while light showers occurred, mainly near the coast. Cool weather prevailed for a few days, but on the 12th, with the appearance of a depression off the coast to the west, the weather rapidly became warmer and a severe *khamsein* ensued. Strong southerly winds arose, often reaching gale force, giving rise to dense dust-storms, visibility at times being less than fifty metres in places. A velocity of 110 kilometres per hour was recorded at Salum. Maximum temperatures were about 40°C. These conditions however were of short duration as westerly winds arrived on the following day causing a return to cool weather.

Khamsein conditions of a very unpleasant type were experienced on the 17th and 18th with the passage of a shallow depression off the Delta. The temperature rose to 41°C (106°F) in Cairo and 47°C (117°F) in Upper Egypt. The skies were overcast with high cloud and there was thick dust haze; the nights of the 17th and 18th, when the temperature in Cairo did not fall below 27°C (81°F) compared with a normal value of 17°C (63°F), were extremely oppressive. The passage of the depression was marked by a severe dust-storm in the early afternoon of the 18th, and the weather rapidly became cool. In Upper Egypt however abnormally hot weather prevailed, and the temperature at Luxor and Aswan reached 48°C (118°F).

For the rest of the month there were only small departures from average conditions while in the last week the weather was pleasantly cool.

For the month as a whole the atmospheric pressure was below normal in all districts while the temperature was everywhere above normal except in Lower Egypt, where it was slightly below. Rainfall in the central and southern Sudan was above normal.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR MAY 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean ...	1013.1	—0.5	26.2	+0.5	17.6	+0.2	21.9	+0.4	0	— 2
II.—Lower Egypt ...	1013.4	—0.3	30.9	—0.5	15.5	+0.3	23.2	—0.1	0	— 2
III.—Middle Egypt ...	1012.8	—0.3	32.8	+0.5	17.7	+0.9	25.2	+0.7	0	— 1
IV.—Upper Egypt ...	1011.5	—0.3	37.2	+1.0	20.3	+0.9	28.8	+1.0	0	—
V.—Western Desert...	1012.8	0.0	37.2	+0.6	19.2	+0.8	28.2	+0.7	0	—
VI.—Red Sea (Egypt)	1010.8	—0.1	31.6	+0.2	21.1	—0.1	26.4	0.0	6	0
VII.—Red Sea (Sudan)*	1009.2	—0.3	35.9	+0.9	24.3	+0.5	30.1	+0.7	1	0
VIII.—North Sudan ...	1008.2	—0.3	42.1	+0.6	26.0	+1.9	34.0	+1.2	2	— 4
IX.—Central Sudan ...	1007.9	—0.7	39.8	—0.1	23.7	+1.1	31.8	+0.5	32	+10
X.—South Sudan ...	1009.5	—1.1	34.5	—0.4	23.0	+1.0	28.8	+0.3	154	+32

\* Port Sudan only.

L. J. SUTTON

Director Meteorological Service.

## State of the River

Lake Albert at Butiaba rose 7 cms. during the month. Its level on June 1st 1940 was 12 cms. below the normal and 50 cms. below the corresponding day of last year.

At Juba on the Bahr el Jebel, with the exception of the flush on the 7th which exceeded both last year and normal gauges, the levels were generally little below the normal and a few cms. above those of last year.

The River Sobat at Nasser continued to fall until the 8th, a steady rise then set in, for a few days and was followed by almost steady levels until the 24th. The levels rose rapidly thereafter and concluded by a slight fall towards the end of the month. The levels were in general more than 70 cms. below normal and about 140 cms. less than those of last year.

The White Nile at Malakal rose rather slower than normal rate. The level which was almost identical with the normal at the beginning of the month was 24 cms. below it at its end. The levels were, throughout the whole month, much below last year's.

The Blue Nile at Roseires started its characteristic flood rise on about the normal date, showing some peaks gradually increasing in height, the highest of which occurred on the 31st which amounted to last year's level but exceeded normal with little less than half a metre. The levels were as a whole below both the normal and those of last year. At Khartoum the levels were almost steady during the first fortnight; a flush occurred between the 16th and 20th due to Sennar Reservoir emptying, when the levels reached the normal but were below last year's. Then the river subsided almost steadily to the end of the month.

At Khashm el Girba on the river Atbara, levels were recorded since May 3rd, but with no significant discharge yet.

The Main Nile at Kajnarti fell steadily and more rapidly than usual. The level which was 26 cms. below normal at the beginning of the month was 83 cms. below it at the end. The levels were more than one metre below last year's. At Aswan, the amount of water reaching the Reservoir was little below normal but much less than last year's.

The differences of the mean levels in May 1940 from those of May 1939 and from the normal 1906-1935 were :

STATION	MEAN DIFFERENCES OF LEVELS	
	May 1940 minus May 1939	May 1940 minus Normal
	Metre	Metre
Juba ... ..	+ 0.03	0.07
Nasser ... ..	— 1.37	— 0.78 †
Malakal ... ..	— 0.59	— 0.16
Roseires ... ..	— 0.66	— 0.23
Khartoum ... ..	— 0.59	— 0.38
Khashm El Girba ... ..	— §	— 0.10 †
Kajnarti ... ..	— 1.28	— 0.64

† Nasser normal is for 1922-35 only.

§ Khashm el Girba 1939 flood season started on May 25th.

‡ For May 3-31 only.

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## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR THE MONTH OF JUNE 1940

### The Weather

Except for two cool spells, warm and rather oppressive.

The month opened with easterly winds and warm weather. On the 5th a depression crossed Lower Egypt from the Western Desert, and the temperature in Cairo rose to 41°C. (106°F.). The depression reached Palestine on the following morning and cool fresh north-westerly winds then prevailed in Egypt.

On the morning of the 9th a depression arrived off Salum. During its advance south-westerly winds reached gale force in coastal areas and sandstorms were prevalent, the visibility at times falling below 50 metres. At Salum the wind attained a velocity of 97 kilometres per hour. The weather was hot; 43°C. (109°F.) was registered at Giza. Lightning was observed near Cairo in the evening and there were drops of rain. The depression travelled quickly eastwards and the arrival of north-westerly winds on the following day brought a rapid and large fall in temperature. Cool weather then prevailed for a week.

From the 18th onwards the barometric pressure over Egypt was low, and the weather warm. On the 25th a shallow depression was situated off the Delta; winds blew from the south-east and the weather became much warmer. The night of 25/26th was very hot and oppressive, the temperature in Cairo not falling below 26°C. (79°F.) throughout; this was the hottest night in June for the last thirty years. In the afternoon the temperature reached 43°C. in Cairo and 45°C. (113°F.) at Giza. In Upper Egypt and the western desert the temperatures were much higher, reaching 48°C. at Aswân and 49°C. (120°F.) at Siwa Oasis, a record since observations began there in 1911.

The depression passed over the Delta during the night and by the morning of the 27th fresh to strong northwesterly winds traversed Egypt, causing a pronounced fall in temperature.

For the month as a whole the mean atmospheric pressure was below normal except in Upper Egypt and the Western Desert, but the departures were nowhere large. The mean temperature was everywhere above normal.

Rainfall was above normal in the Central Sudan, but considerably below normal in the Southern Sudan.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR JUNE 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1011.8	-0.1	29.5	+0.8	21.4	+0.3	25.4	+0.6	0	- drops
II.—Lower Egypt ...	1012.0	0.0	34.1	+0.3	18.0	-0.1	26.0	+0.1	0	0
III.—Middle Egypt ...	1011.5	-0.1	36.4	+1.5	20.3	+0.7	28.4	+1.1	0	0
IV.—Upper Egypt ...	1010.3	+0.2	40.1	+1.7	22.6	+0.6	31.4	+1.2	0	—
V.—Western Desert(2)	1011.7	+0.3	40.3	+1.5	23.8	+1.1	32.0	+1.3	0	—
VI.—Red Sea (Egypt)	1008.8	+0.4	35.1	+1.7	23.8	-0.2	29.4	+0.8	0	0
VII.—Red Sea(Sudan)(3)	1007.0	+0.3	40.3	+1.5	26.5	+0.8	33.4	+1.2	drops	0
VIII.—North Sudan ...	1007.8	-0.2	44.3	+2.1	27.7	+2.3	36.0	+2.2	2	- 1
IX.—Central Sudan ...	1009.1	-0.6	38.6	+0.4	24.2	+1.2	31.4	+0.8	67	+18
X.—South Sudan ...	1011.2	-0.6	33.3	+0.4	22.2	+1.2	27.8	+0.8	95	-48

(1) Alexandria and Port-Said.

(2) Siwa, Kharga and Dakhla.

(3) Port Sudan.

### RAINFALL DATA FOR THE MONTH OF JUNE 1940

Station	1940	Diff. from Normal	Station	1940	Diff. from Normal
	m/ in	m/ in		m/ in	m/ in
Juba ... ..	46	— 88	Addis Ababa *	—	—
Wau ... ..	110	— 56	Roseires ... ..	145	+ 17
Malakal ... ..	130	0	Wad Medani ... ..	57	+ 21
El Obeid ... ..	19	— 18	Atbara ... ..	Drops	— 2
El Fasher ... ..	drops	— 17	Kassala *	—	—
Khartoum ... ..	7	— 2	Port Sudan ... ..	Drops	+ Dps.

\* No readings available.

L. J. SUTTON

*Director Meteorological Service.*

### State of the River

Lake Albert at Butiaba fell 9 cms. during the month. Its level on July 1, 1940, was 24 cms. below the normal and 52 cms. below the corresponding day of last year.

The Bahr el Jebel at Juba fell slightly during the first fortnight, the levels were below both the normal and last year's levels.

The River Sobat at Nasser started the month with a regular rise which was maintained until the 14th. The levels were almost steady for a few days then rose again to a peak on the 22nd. This rise was followed however by an unusual fall lasting till the end of the month. The levels were, throughout the whole month, much below both the normal and those of last year.

The White Nile at Malakal rose at almost normal rate. Owing to the low supply from the River Sobat, the levels remained steady during the last week of the month. In general, the levels were a little below normal but much below those of last year.

At Roseires on the Blue Nile, the red water was reported on the 2nd. The levels fluctuated violently about the normal throughout the month showing three prominent peaks on the 7th, 23rd and 30th which were 109, 79 and 25 cms. respectively above the normal. The levels were much below those of last year. At Khartoum the river rose with minor fluctuations up to the 14th, remained almost steady up to the 25th and then rose again till the end of the month. The levels were half a metre below normal and about 60 cms. less than those of last year.

At Khashm El Girba, the River Atbara fell gradually until the 11th when it was again reduced to pools. On the 24th, however, a flush of one metre was recorded and the river rose till the end of the month when the level was a little below normal and almost identical with that of last year.

The Main Nile at Kajnarti rose steadily until the 5th, fell slightly up to the 19th and then rose again to the end of the month. The levels were more than half a metre below the normal and about one metre below those of last year.

The differences of the mean levels in June 1939 and from the normal 1906-35 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	June 1940 minus June 1939	June 1940 minus Normal
	Metres	Metres
Juba † ... ..	— 0·09	— 0·24
Nasser ... ..	— 1·23	— 0·73 *
Malakal ... ..	— 0·62	— 0·15
Roseires ... ..	— 0·54	— 0·08
Khartoum ... ..	— 0·61	— 0·50
Kajnarti ... ..	— 0·96	— 0·63

† For 1-16, only.

\* Nasser normal is for 1922-35 only.

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# Ministry of Public Works, Egypt.—Physical Department.

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR THE MONTH OF JULY 1940

### The Weather

At the beginning of the month a depression situated over Asia Minor caused southerly winds and dry hot weather in Egypt. The temperature reached 43°C (109°F) in Cairo, and 40°C (104°F) in Alexandria. The latter was 11°C above the normal for the time of the year. These are record high temperatures for July for the last forty years at least.

In this connection it is interesting to note that on August 26th, 1881, a temperature of 47.3°C (117°F) was recorded at the Khedivial Observatory at Abbassia. This is by far the highest temperature reached in Lower Egypt during July or August, though this value has been slightly exceeded in June at several places. The records at Abbassia date from 1869.

By the following day the depression had passed to the east, and northerly winds arriving in Egypt brought a sharp fall in temperature, cool weather lasting for a week. For the remainder of the month the weather was almost continuously warmer than usual.

For the month as a whole the barometric pressure and the temperature were above normal throughout Egypt and the Sudan. In the Sudan, rainfall was below normal in the central district, but slightly above normal elsewhere.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR JULY 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1010.0	+1.2	30.7	+0.4	23.2	+0.2	27.0	+0.3	0	0
II.—Lower Egypt ...	1010.3	+1.3	34.5	+0.1	19.8	+0.1	27.2	+0.1	0	0
III.—Middle Egypt ...	1010.2	+1.2	36.6	+0.9	21.4	+0.2	29.0	+0.6	0	0
IV.—Upper Egypt ...	1009.0	+1.1	39.4	+0.9	23.2	+0.1	31.3	+0.5	0	—
V.—Western Desert(2)	1011.0	+1.5	39.5	+0.5	22.6	+0.4	31.0	+0.4	0	—
VI.—Red Sea (Egypt)	1007.4	+1.2	35.2	+0.8	—	—	—	—	0	0
VII.—Red Sea(Sudan)(3)	1005.9	+0.5	40.9	0.0	28.4	+0.4	34.6	+0.2	7	+ 2
VIII.—North Sudan ...	1009.1	+1.0	41.0	+0.4	26.1	+0.9	33.6	+0.6	31	+ 5
IX.—Central Sudan ...	1011.7	+0.6	34.5	—0.3	22.8	+0.7	28.6	+0.2	99	—26
X.—South Sudan ...	1012.9	+0.5	30.7	—0.7	21.7	+1.1	26.2	+0.2	171	+ 9

(1) Alexandria and Port-Said.

(2) Siwa, Kharga and Dakhla.

(3) Port Sudan.

RAINFALL DATA FOR THE MONTH OF JULY 1940

Station	1940	Diff. from Normal	Station	1940	Diff. from Normal
	m/m	m/m		m/m	m/m
Juba ... ..	88	— 33	Addis Ababa *	—	—
Wau ... ..	258	+ 68	Roseires ... ..	158	— 28
Malakal ... ..	166	— 8	Wad Medani ... ..	85	— 50
El Obeid ... ..	76	— 22	Atbara ... ..	2	— 16
El Fasher ... ..	93	— 16	Kassala * ... ..	—	—
Khartoum ... ..	90	+ 38	Port Sudan ... ..	7	+ 2

\* No readings available.

L. J. SUTTON  
Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba rose only 4 cms. during the month. Its level on August 1st 1940 was 22 cms. below the normal and 49 cms. below the corresponding day of last year.

The Bahr el Jebel at Juba showed some flushes during the month exceeding both normal and last year's level. The levels in general showed no tendency to rise and were below both normal and those of last year.

The River Sobat at Nasser rose rather faster than normal rate during the first fortnight and normally thereafter. The levels were much below both the normal and last year's throughout.

The White Nile at Malakal remained almost steady for the first 9 days then rose faster than normal rate, its levels were below normal and much below those of last year. At Gebel Aulia, filling of the reservoir started on the 23rd. The levels downstream fell rapidly thereafter until the 27th then rose again to the end of the month.

During the first three weeks, the Blue Nile at Roseires fluctuated much below the normal and last year's levels. During the last week, however, an unusually sharp and steady rise amounting to about four metres set in, bringing the level at the end of the month to 1.38 metres above the normal and about 2 metres above that of last year. The same features were reflected at Khartoum on the Blue Nile, and the levels were in general much below the normal and those of last year.

The Main Nile at Kajnarti rose sharply after the steady levels which prevailed during the first ten days. The levels on the average were more than one metre below the normal and 90 cms. less than those of last year.

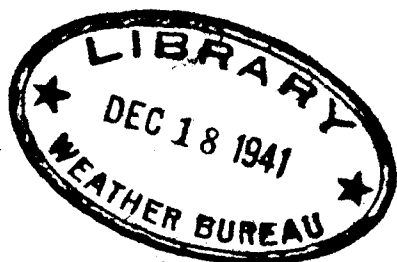
The differences of the mean levels in July 1940 from those of July 1939 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	July 1940 minus July 1939	July 1940 minus Normal
	Metre	Metre
Juba ... ..	— 0.07	— 0.18
Nasser ... ..	— 0.91	— 0.72 *
Malakal ... ..	— 0.52	— 0.24
Roseires ... ..	— 0.90	— 0.77
Khartoum ... ..	— 0.79	— 1.03
Khashm el Girba † ... ..	—	—
Kajnarti ... ..	— 0.90	— 1.19

\* Nasser normal is for 1922-35 only.

† No records available.

Y. M. SIMAIKA,  
Director, Hydrological Service.



## State of the River

Lake Albert at Butiaba rose only 2 centimetres during the month. Its level on May 1st, 1941, was 31 centimetres below the normal and 17 centimetres below the corresponding day of last year.

With the exception of few small flushes, the Bahr el Jebel at Juba was almost steady during the month. The levels were in general below both the normal and last year's.

The river Sobat at Nasser slightly fluctuated with a tendency to rise during the whole month. The levels in general were considerably below the normal and those of last year.

The White Nile at Malakal was almost steady during the whole month. The levels were continuously below both the normal and those of last year. At Gebel Aulia the Reservoir was empty about the 12th, the head on the dam remained adjusted so as not to drop below about 50 centimetres.

The Blue Nile at Roseires continued to fall slightly during the month. The levels were much below the normal and those of last year. At Khartoum the river followed the same features at D.S. Gebel Aulia.

At Kajarti, on the Main Nile, the steady levels which prevailed during the last month continued until the 14th, the river subsided rapidly thereafter to the end of the month when the level was much below both the normal and that of last year.

The difference of the mean levels in April 1941 from those of April 1940 and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	April 1941 minus April 1940	April 1941 minus Normal
	Metre	Metre
Juba ... ..	— 0·19	— 0·35
Nasser ... ..	— 0·19	— 0·52*
Malakal ... ..	— 0·25	— 0·32
Roseires ... ..	— 0·34	— 0·28
Khartoum ... ..	— 0·06	— 0·43
Kajnarty ... ..	— 0·23	— 0·12

\* Nasser normal is for 1922-1935 only.

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# Ministry of Public Works, Egypt.—Physical Department.

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR APRIL 1941

### The Weather

Warm for the first fortnight, cool for most of the rest of the month.

On the 3rd of the month a shallow depression developed near Aswân and on the following day moved to the northern Red Sea, its passage being accompanied by showers in Upper Egypt and a thunderstorm at Tor. Throughout Egypt the weather was warm. On the 6th a trough of low pressure appeared over the Ionian Sea and moving eastwards caused southerly winds in Egypt, and the weather became much warmer, the maximum temperature near Cairo on the 7th reaching 37° C. (99° F.), or 10° C. above normal. The passage of the trough on that day was marked by a dust-storm, and a rapid fall of temperature took place, but on the 9th hot winds again blew from the south.

Normal conditions then prevailed until the 12th, when a depression appeared off Mersa Matruh; winds went round to the south-east and the temperature near Cairo rose to 36° C. on the 13th. The depression passed on the following day, when strong cool north-westerly winds prevailed, reaching a velocity of 70 kilometres an hour at Alexandria. There was a remarkably large and rapid fall of temperature, which did not rise above 22° C. near Cairo on the 14th. Cool weather was maintained until the 17th when a small but deep depression appeared in the western desert. Strong east and south-east winds blew in Egypt and dust-storms were widespread; very light showers occurred in a few places in Lower Egypt. In the evening the depression crossed the Delta, winds veered to the west and the weather became much cooler.

A depression again appeared in the western desert on the 20th, but it moved eastwards over Upper Egypt, and cool north-easterly winds prevailed over Lower Egypt. A velocity of 74 kilometres an hour was recorded at Helwan. Skies were overcast and light showers were general.

The spell of cool weather was maintained until the 26th when a depression over the Eastern Mediterranean gave rise to southerly winds and a sharp rise of temperature, which reached 38° C. (100° F.) in Cairo on the following day. The depression passed in the evening with a severe dust-storm, and with the arrival of northerly winds the weather rapidly became cooler.

For the month as a whole the mean barometric pressure was everywhere below normal, while the temperature was above normal in all districts. In Egypt and the Sudan the rainfall was below normal.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR APRIL 1941

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean <sup>(1)</sup>	1013.2	—0.7	24.6	+1.0	16.2	+0.8	20.4	+0.9	Drops	— 4
II.—Lower Egypt ...	1013.3	—1.3	28.2	+0.4	11.9	+0.1	20.0	+0.2	Drops	— 3
III.—Middle Egypt ...	1013.2	—1.2	29.4	+1.0	14.2	+0.9	21.8	+1.0	Drops	— 2
IV.—Upper Egypt ...	1012.2	—1.3	33.1	+0.5	16.4	+1.2	24.8	+0.8	1	—
V.—Western Desert	1013.5	—1.0	32.7	+0.3	16.2	+1.4	24.4	+0.8	Drops	0
VI.—Red Sea (Egypt)	1011.4	—0.9	28.8	+0.7	18.1	+0.8	23.4	+0.8	1	+ 1
VII.—Red Sea(Sudan) <sup>(2)</sup>	1010.4	—0.7	32.8	+1.2	22.1	+0.7	27.4	+1.0	Drops	— 1
VIII.—North Sudan ...	1009.7	—0.2	40.1	+0.9	21.2	+1.1	30.6	+1.0	Drops	— 1
IX.—Central Sudan ...	1007.6	—0.4	40.7	+0.6	21.5	+1.2	31.1	+0.9	Drops	— 4
X.—South Sudan ...	1008.8	—0.8	37.6	+0.4	24.8	+2.3	31.2	+1.4	53	—20

(1) Alexandria and Port Said.

(2) Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.



Note August 1940 - April 1941  
following are in reverse order

### State of the River

Lake Albert at Butiaba fell 3 cms. during the month. Its level on April 1st, 1941 was 34 cms. below the normal and 19 cms. below the corresponding day of last year.

The Bahr el Jebel at Juba was almost steady during the month. The levels were much below the normal and few cms. below those of last year.

The River Sobat at Nasser and the White Nile at Malakal were generally falling during the month. A slight rise occurred by the end of the month at Nasser which resulted in almost steady levels at Malakal during the last few days of the month. The levels were in both gauges much below the normal and those of last year.

The Blue Nile at Roseires continued its fall at normal rate. The levels were below both the normal and last year's throughout. At Khartoum the river recorded almost steady levels, being affected by the emptying of Gebel Aulia Reservoir.

The Main Nile at Kajnarty, contributed by Gebel Aulia, showed almost steady levels which maintained to the end of the month. The levels, generally, were identical with the normal, but about 40 cms. below those of last year.

The difference of the mean levels in March 1941 from those of March 1940 and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	March 1941 minus March 1940	March 1941 minus Normal
	Metre	Metre
Juba ... ..	— 0·13	— 0·33
Nasser ... ..	— 0·32	— 0·29*
Malakal ... ..	— 0·30	— 0·33
Roseires ... ..	— 0·32	— 0·14
Khartoum ... ..	— 0·05	+ 0·18
Kajnarty ... ..	— 0·41	— 0·01

\* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR MARCH 1941

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX. + MIN./2			
	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1014.8	—0.8	21.4	+0.2	13.6	+0.5	17.5	+0.4	18	+ 6
II.—Lower Egypt ...	1015.0	—1.3	23.0	—0.9	9.4	+0.4	16.2	—0.2	18	+12
III.—Middle Egypt ...	1015.3	—1.1	24.4	+0.2	11.8	+1.3	18.1	+0.8	12	+ 8
IV.—Upper Egypt ...	1015.3	—0.6	27.9	0.0	12.1	+1.1	20.0	+0.6	2	—
V.—Western Desert	1016.5	—0.3	27.3	—0.3	10.1	+0.3	18.7	0.0	0	0
VI.—Red Sea (Egypt)	1014.4	—0.2	25.4	+0.5	14.0	—0.1	19.7	+0.2	20	+18
VII.—Red Sea(Sudan)(2)	1013.0	+0.2	—	—	—	—	—	—	0	— 2
VIII.—North Sudan ...	1013.1	+0.7	35.4	+0.3	16.6	+0.3	26.0	+0.3	0	0
IX.—Central Sudan ...	1010.7	+0.5	37.8	+0.3	18.0	+1.1	27.9	+0.7	0	— 1
X.—South Sudan ...	1009.2	0.0	38.6	+0.5	23.4	+1.9	31.0	+1.2	43	+21

<sup>(1)</sup> Alexandria and Port Said.

<sup>(2)</sup> Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

## **Ministry of Public Works, Egypt.—Physical Department.**

### **REPORT ON THE WEATHER AND STATE OF THE RIVER FOR MARCH 1941**

#### **The Weather**

Slightly warmer than usual, especially by night, but departures from normal were rarely large.

At the beginning of the month a deep depression was situated off the Delta, and cold northwesterly winds of gale force traversed Egypt, reaching a velocity of 70 kilometres per hour at Alexandria. The maximum temperature in Cairo on the 1st was 16° C, or 7° C. below normal. Heavy rain was widespread, the rain area extending into Upper Egypt. At Mansoura 27 mms. were recorded on the 1st, at Alexandria 18 mms., at Zagazig 15 mms., and at Helwan and Fayoum 12 mms. Sandstorms also occurred in Upper Egypt, while at Tor there were severe thunderstorms, and 39 mms. of rain fell in three days. The weather remained unsettled for three or four days, gradually improving as the depression moved to northern Iraq.

The winds became southerly on the 5th with the approach of a shallow depression off the coast to the west, and the weather became much warmer, the temperature in Cairo reaching 29° C. on the following day. By the 8th high pressure had formed west of Egypt, and cool light northwesterly winds prevailed for a few days, but on the 11th Egypt again came under the influence of a depression off Matruh, and the winds went round to the south bringing a return of warm weather. An unusually deep depression was centred off Salum on the 14th, giving rise to strong southerly gales and khamsin conditions; very severe sandstorms were experienced throughout Egypt, the visibility at times being restricted to only a few metres, while in exposed desert places it was reported as nil; the accumulation of sand on the railway lines seriously interfered with traffic. At Helwan the velocity of the wind reached 84 kilometres per hour. Moving at a speed of about 50 kilometres per hour, the depression passed the Delta during the night and reached Syria by the following morning. Strong westerly winds, reaching 80 kilometres per hour at Alexandria, traversed Egypt and the weather became much cooler; light showers were general throughout Lower Egypt.

On the 21st depressions were situated off Salum and over Upper Egypt and with southeasterly winds the temperature in Cairo rose to 32° C., but owing to the rapid passage of the depressions these conditions were of short duration and by the following morning, a cool northwesterly current prevailed throughout Egypt, and the temperature in Cairo did not rise above 21° C. Light showers were widespread.

Subsequently Egypt became an area of high pressure, and settled conditions with pleasant weather continued until the 28th when there was again a short spell of hot weather.

For the month as a whole barometric pressure was below normal in Egypt and slightly above normal in the Sudan. Temperature was above normal everywhere except in Lower Egypt where it was slightly below. Rainfall was much above normal throughout Egypt, below normal in the central Sudan, and above in the southern Sudan.



## State of the River

Lake Albert at Butiaba fell 9 centimetres during the month. Its level on March 1st, 1941, was 40 centimetres below the normal and 22 centimetres below the corresponding day of last year.

The Bahr el Jebel at Juba was practically steady during the whole month and the levels were much below both the normal and those of last year throughout.

The River Sobat at Nasser fell slightly during the first fortnight when the levels were much below the normal and last year's. A slight rise occurred during the third week bringing up the level on the 20th to 8 centimetres below normal but the river fell thereafter to the end of the month.

The Withe Nile at Malakal fell slower than normal rate, its levels were in general much below the normal and those of last year.

With the exception of the slight rise which happened during the period 17–23, the Blue Nile at Roseires fell gradually during the month, the levels were much below both the normal and last year's levels. The emptying of Gebel Aulia Reservoir maintained steady levels downstream Gebel Aulia and at Khartoum during the whole month.

At Kajnarti on the Main Nile, the river continued to fall until the 6th, after which a steady rise occurred—owing to contribution from Gebel Aulia—which lasted until the 16th and the river kept almost steady thereafter to the end of the month. The levels, as a whole, were below both the normal and those of last year.

The differences of the mean levels in February 1941 from those of February 1940 and from the normal 1906–1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	February 1941 minus February 1940	February 1941 minus Normal
	Metre	Metre
Juba ... ..	— 0·23	— 0·45
Nasser * ... ..	— 0·44	— 0·29
Malakal ... ..	— 0·28	— 0·47
Roseires ... ..	— 0·37	— 0·10
Khartoum ... ..	— 0·07	+ 0 05
Kajnarty ... ..	— 0·31	— 0·89

\* Nasser normal is for 1922–1935 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR FEBRUARY 1941

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1016.1	-0.8	22.2	+2.8	12.8	+1.7	17.5	+2.2	22	- 2
II.—Lower Egypt ...	1016.5	-0.3	23.7	+3.1	7.7	+0.7	15.7	+1.9	15	+ 4
III.—Middle Egypt ...	1016.6	-1.0	24.7	+4.0	10.1	+1.8	17.4	+2.9	4	+ 1
IV.—Upper Egypt ...	1016.5	-1.3	27.1	+3.8	10.7	+2.7	18.9	+3.2	1	—
V.—Western Desert	1017.3	-1.2	26.3	+2.9	7.7	+1.7	17.0	+2.3	0	0
VI.—Red Sea (Egypt)	1015.7	-0.6	24.6	+2.2	12.6	+1.3	18.6	+1.8	0	- 1
VII.—Red Sea(Sudan)(2)	1014.0	-0.7	29.1	+1.9	20.8	+1.7	25.0	+1.8	drops	- 3
VIII.—North Sudan ...	1014.1	-0.8	32.8	+2.0	15.3	+2.2	24.0	+2.1	drops	0
IX.—Central Sudan ...	1011.2	-0.8	35.5	+0.8	15.5	+1.2	25.5	+1.0	0	0
X.—South Sudan ...	1009.3	-0.7	38.7	+1.3	21.8	+1.8	30.2	+1.6	drops	- 6

(1) Alexandria and Port Said.

(2) Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

**REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR FEBRUARY, 1941.**

**The Weather**

Throughout Egypt the warmest February on record. This was due to a succession of depressions traversing the Mediterranean and Southern Europe, preventing the formation of high pressure over the Balkans, and so depriving Egypt of the cold air currents from that region usually frequent at this time of year.

The month opened with mild weather. On the 3rd a small depression appeared over Cyrenaica. Winds in Egypt veered to south-west and freshened. The depression travelled quickly eastwards causing strong westerly winds on the coast later.

On the 6th Egypt came under the influence of a deep depression over Greece with a secondary off Salum; southerly winds sprang up and considerable dust was raised in the air; at Alexandria, the wind velocity reached 70 k.p.h. and the visibility fell in the afternoon to less than 50 metres. The weather became much warmer, the maximum temperature registered in Cairo was  $28^{\circ}\text{C.}$ , being  $8^{\circ}\text{C.}$  above normal. By the evening the secondary had passed the Delta, and the cool westerly winds in the rear brought a considerable fall in temperature. Pressure over the Eastern Mediterranean remained low for a few days, cool weather continued and scattered showers occurred over Northern Egypt from the 9th to 11th. At Alexandria 18 millimetres were recorded, and at Damietta 23 millimetres. The maximum temperature registered at Helwan on the 11th did not exceed  $15^{\circ}\text{C.}$ , being  $5^{\circ}\text{C.}$  below normal.

The showery weather came to an end with the formation over Egypt of a system of high pressure; this was maintained until the 15th.

On the 18th a secondary depression appeared near Benghazi; moving rapidly eastwards it gave rise on the following day to warm south-east winds and khamsin conditions in Northern Egypt; the temperature reached  $32^{\circ}\text{C.}$  ( $90^{\circ}\text{F.}$ ) at Giza, being  $11^{\circ}\text{C.}$  above normal.

The depression passed along the coast of the Delta on the 20th, but soon was followed by another secondary and thus the warm spell was prolonged. The heat wave intensified on the 22nd, when the latter depression approached the Delta; khamsin conditions developed and abnormally hot weather prevailed throughout Egypt, record high temperatures for February being registered at several stations in both Lower and Upper Egypt. In Cairo the temperature rose to  $35^{\circ}\text{C.}$  ( $95^{\circ}\text{F.}$ ) i.e.  $13^{\circ}\text{C.}$  above normal; this is the highest temperature recorded in any February since the station was opened in 1909. The cold front of this depression passed over the Delta on the next day and the arrival of the north-west wind lowered the temperature, which however remained much above normal until the 26th.

On the 27th a deep depression appeared over Greece, passing to Syria on the following day. Meanwhile a shallow secondary was traversing the Delta. The weather became cool and very unsettled. Hail and thunderstorms occurred in many places, and showers, particularly heavy near the coast, were widespread. The rainfall at Atf on that day was 29 millimetres and at Dabaa 25 millimetres. The wind at times reached the force of a whole gale, and at Helwan a velocity of 85 kilometres per hour was recorded.

For the month as a whole the barometric pressure was below normal, and the temperature above, throughout Egypt and the Sudan, particularly so in Upper Egypt. Rainfall was about normal.

## State of the River

Lake Albert at Butiaba fell 13 centimetres during the month. Its level on February 1, 1941, was 42 centimetres below the normal and 21 centimetres below the corresponding day of last year.

The Bahr el Jebel at Juba fell slightly during the month. The levels were below both the normal and last year's throughout.

The River Sobat at Nasser and the White Nile at Malakal, both fell slower than normal rate, the levels were continuously below the normal and those of last year.

At Jebel Aulia regulation on the dam started on the 23rd, the D.S. gauge rose gradually thereafter until the 29th and then kept steady to the end of the month.

The Blue Nile at Roseires fell normally, the levels were on general 18 centimetres below the normal but were about half a metre below last year's levels. At Khartoum the levels showed the same effect recorded D.S. Gebel Aulia due to the emptying of the Reservoir.

At Kajnarty, on the Main Nile, the river fell almost at normal rate and the levels were much below both the normal and those of last year.

The difference of the mean levels in January 1941 from those of January 1940 and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	January 1941 minus January 1940	January 1941 minus Normal
	Metre	Metre
Juba ... ..	— 0·22	— 0·45
Nasser * ... ..	— 0·44	— 1·07
Malakal ... ..	— 0·37	— 0·89
Roseires ... ..	— 0·53	— 0·18
Khartoum ... ..	— 0·33	— 0·72
Kajnarty ... ..	— 1·17	— 1·65

\* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

# Ministry of Public Works, Egypt.—Physical Department.

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR JANUARY, 1941.

### The Weather

Very mild and dry ; at several stations the warmest January for many years. Unusually high prevalence of warm southerly winds : several sandstorms ; negligible rainfall.

At the beginning of the month a shallow depression was situated near Cyprus and showers occurred in Alexandria district. For the next week the weather was settled, rather mild by day and cold by night, and thick morning mists were general. On the 5th and 11th the grass minimum at Giza fell to freezing point.

On the 11th Egypt came under the influence of a depression off the coast in the west. On the following day it passed along the coast of the Delta and gave rise to typical khamsin conditions—warm southerly winds of gale force and dense sandstorms throughout Lower Egypt. In exposed places visibility was reduced at times to a few metres. By the 13th the depression had reached Syria ; the wind became more westerly and weakened, and conditions improved, but on the 15th owing to the approach of another depression the winds again became southerly though only of moderate strength ; khamsin conditions and sandstorms were again experienced and the weather became much warmer, the heat wave reaching its maximum intensity on the 17th, when record high temperatures for January were registered at Alexandria (28° C.), Damanhur (29° C.) and Tanta (30° C.). These values are 9° C. above the normal for the time of year.

With the passage of the depression the wind veered to west and rose to gale strength : a sharp drop in temperature followed and by the 19th it had fallen to slightly below normal. During this period there were frequent light showers but the amount of rain was rarely measurable. At Alexandria the velocity of the wind reached 80 kilometres per hour on the 18th and 85 k.p.h. on the 19th.

Thick morning mists occurred in many localities on the 22nd and 23rd, when a second and equally intense heat wave began, the weather becoming steadily warmer until the 27th. During this period winds were southerly and the temperature again reached 30° C. On the 28th a deep and extensive depression was centred over Cyprus, and in many places the wind reached the force of a strong gale. At Alexandria a velocity of 82 kilometres per hour was registered. Severe sandstorms were wide-spread as far south as Qena. The depression passed to northern Iraq on the following day, and with the winds becoming north-westerly the weather rapidly became much cooler.

For the month as a whole barometric pressure was everywhere slightly above normal, except in the Central and Southern Sudan, while the temperature was considerably above normal in all districts. Rainfall was everywhere almost negligible in quantity. At Alexandria for example, there was only one day of measurable rain compared with an average of ten days, while the total rainfall for the month was only 5 millimetres compared with an average of 50 millimetres. As the rainfall of December also was abnormally low, the rainy season is so far one of the driest on record. On account of the prevalence of southerly winds, relative humidity was unusually low for the time of year.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR JANUARY 1941

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1018.6	+0.4	21.4	+2.8	12.2	+1.6	16.8	+2.2	2	—32
II.—Lower Egypt ...	1019.2	+0.3	22.2	+2.4	6.8	0.0	14.5	+1.2	0	—13
III.—Middle Egypt ...	1019.7	+0.3	22.1	+2.9	8.6	+0.9	15.4	+1.9	0	—5
IV.—Upper Egypt ...	1020.0	+0.4	24.0	+2.7	7.4	+0.3	15.7	+1.5	0	—1
V.—Western Desert	1020.8	+0.6	22.7	+1.5	4.1	—0.9	13.4	+0.3	0	0
VI.—Red Sea (Egypt)	1018.4	+0.4	23.2	+1.5	12.2	+0.2	17.7	+0.8	0	—1
VII.—Red Sea(Sudan)(2)	1016.1	+0.5	28.7	+1.6	21.0	+1.1	24.8	+1.4	drops	—7
VIII.—North Sudan ...	1016.2	+0.2	31.4	+2.4	13.6	+1.4	22.5	+1.9	0	0
IX.—Central Sudan ...	1013.1	—0.1	34.7	+1.6	14.0	+0.8	24.4	+1.2	0	0
X.—South Sudan ...	1010.6	—0.4	37.2	+0.9	19.6	+1.0	28.4	+1.0	0	—2

(1) Alexandria and Port Said.

(2) Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba rose only one centimetre during the month. Its level on January 1, 1941, was 42 centimetres below the normal and 28 centimetres below the corresponding day of last year.

The Bahr el Jebel at Juba fell a few centimetres during the month. Its levels were below both the normal and last year's throughout.

The River Sobat at Nasser fell more rapidly than normal rate until the 24th. During the last week a slight rise set in, but the levels were still much below both the normal and those of last year.

At Malakal on the White Nile, the same features as at Nasser have been recorded a few days later, the levels in general were about one metre below both the normal and those of last year.

The Blue Nile at Roseires fell nearly at normal rate, the levels kept below both the normal and last year's throughout the whole month. At Khartoum the levels were almost steady until the 17th when a big fall set in lasting to the end of the month.

The Main Nile at Kajnarti fell more than half a metre during the month. The levels were continuously below both the normal and those of last year.

The difference of the mean levels in December 1940 from those of December 1939 and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	December 1940 minus December 1939	December 1940 minus Normal
	Metre	Metre
Juba ... ..	— 0·18	— 0 39
Nasser ... ..	— 1·61	— 2·56*
Malakal ... ..	— 0·90	— 1 06
Roseires ... ..	— 0·69	— 0·32
Khartoum ... ..	— 0·60	— 0 85
Kajnarty ... ..	— 1·12	— 1·41

\* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

# Ministry of Public Works, Egypt.—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR DECEMBER, 1940.

### The Weather

Abnormally cold and dry. As far as humidity is concerned, the driest December Alexandria and Cairo for at least 37 years.

At the beginning of the month the weather was mild, but the arrival on the 3rd of a depression over the eastern Mediterranean caused strong north-westerly winds and cool rainy weather in Lower Egypt. At Alexandria the wind velocity reached 75 kilometres an hour. Warmer weather with dry southerly winds followed.

For a fortnight beginning on the 11th a remarkable cold spell was experienced. During most of this time the eastern Mediterranean was an area of low pressure, while high pressure was situated over Upper Egypt and the interior of the western desert. Except on the 14th and 15th when there was rain on the coast and thick fog inland, the resulting southerly winds were very cold and dry. Night temperatures in particular were abnormally low for such a long period. Freezing point was reached at Giza on the 20th, while ground frosts occurred on nine occasions; the grass minimum thermometer recorded 5° C. below zero on the 20th. On the following two days, with high pressure over the Balkans and a depression over Syria, heavy rain fell in the north of the Delta, 35 millimetres being recorded at Dikheila.

Lower Egypt then became an area of high pressure, and on the 24th, 25th, and 26th, when the weather became much milder by day, thick fogs were widespread.

On the 27th a depression appeared near the coast to the west of Egypt, resulting in warm southerly winds. In Cairo the temperature reached 27° C., or 7° C. above normal, on the 28th, but the passage of this depression to Syria by the following day brought a rapid and large fall in temperature; on the 30th the temperature in Cairo did not rise above 16° C. During this period the weather was unsettled, with showers and north westerly gales near the coast, while sandstorms occurred in some localities inland.

For the month as a whole the barometric pressure was everywhere above normal, except in the central and southern Sudan, while the temperature was below normal throughout Egypt—especially in Lower Egypt—and above normal in the Sudan. Throughout Egypt rainfall was much below normal. The relative humidity was 11 per cent below normal at Alexandria and 14 per cent below normal at Helwan, being below normal on all but 5 days in the month.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR DECEMBER 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1019.4	+1.4	20.3	—0.3	11.0	—1.5	15.6	—0.9	18	—15
II.—Lower Egypt ...	1019.8	+1.2	20.9	—0.6	6.6	—2.2	13.8	—1.4	3	—5
III.—Middle Egypt ...	1020.6	+1.6	21.3	+0.3	8.0	—1.5	14.6	—0.6	drops	—4
IV.—Upper Egypt ...	1020.5	+1.5	23.1	+0.2	7.8	—1.2	15.4	—0.5	drops	—1
V.—Western Desert(2)	1021.0	+1.5	21.0	—1.8	4.9	—1.7	13.0	—1.8	0	—2
VI.—Red Sea (Egypt)	1018.8	+1.5	23.2	—0.3	11.9	—0.8	17.6	—0.6	0	—2
VII.—Red Sea(Sudan)(3)	1016.1	+1.0	29.4	+1.0	22.4	+1.0	25.9	+1.0	65	+38
VIII.—North Sudan ...	1015.9	+0.3	31.8	+1.6	15.4	+1.6	23.6	+1.6	0	0
IX.—Central Sudan ...	1012.4	—0.2	34.6	+1.0	15.9	+1.9	25.2	+1.4	0	0
X.—South Sudan ...	1010.4	—0.5	37.0	+1.1	19.8	+1.3	28.4	+1.2	1	—5

(1) Alexandria and Port Said.

(2) Siwa and Kharga.

(3) Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba fell 3 cms. during the month. Its level on December 1, 1940 was 46 cms. below both the normal and that of the corresponding day of last year.

The Bahr el Jebel at Juba was almost steady during the month. The levels were much below both the normal and last year's.

The River Sobat at Nasser continued its abnormally rapid fall. The level which was half a metre below normal on the beginning of the month was more than two metres below it at its end.

The White Nile at Malakal was practically steady until the 20th of the month when it started its annual fall. The levels were below both the normal and those of last year throughout the month.

The Blue Nile at Roseires fell slower than normal rate. A slight rise was recorded during the last week which brought the level on the 25th some cms. below the normal but the levels on the average were about half a metre below the normal and more than a metre below last year's. At Khartoum the River fell more rapidly owing to the completion of Sennar Reservoir filling. The levels were much below both the normal and those of last year throughout.

The Main Nile at Kajuarti fell slower than normal rate and was much below both the normal and last year throughout the month. The level which was about 2.5 metres below normal at the beginning of the month was about 1.5 metres below it at its end.

The difference of the mean levels in November 1940 from those of November 1939 and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	November 1940 minus November 1939	November 1940 minus Normal
	Metre	Metre
Juba ... ..	— 0.32	— 0.51
Nasser ... ..	— 1.25	— 1.24*
Malakal ... ..	— 0.38	— 0.43
Roseires ... ..	— 1.12	— 0.56
Khartoum ... ..	— 0.89	— 1.01
Kajnarty ... ..	— 2.03	— 1.91

\* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

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# Ministry of Public Works, Egypt.—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR NOVEMBER, 1940

### The Weather

Apart from two rather warm spells, little difference from average conditions.

During the first week Egypt was under the influence of low pressure over Syria and cool northwesterly winds prevailed, with showery weather near the coast and in the Delta. Subsequently the passage of a depression along the eastern Mediterranean gave rise to southerly winds in Egypt, and the weather became warmer. This depression reached Cyprus on the 11th and the arrival of northwesterly winds brought a fall in temperature and a return of showery weather, lasting until the 16th. For the following week winds were chiefly northeasterly, with rather warm days and cool nights: morning mists were frequent. On the 23rd, a small depression appeared off Alexandria, and moving to the Syrian Coast caused showers in Egypt especially near the coast, but the weather remained mild by day. At Alexandria rain fell on five successive days. The depression which was centred near Cyprus on the 27th, and 28th, then deepened, and the wind reached gale force on the coast, a velocity of 78 kilometres per hour being recorded at Alexandria, while the weather became cooler.

For the month as a whole the barometric pressure was above normal in Egypt and below in the Sudan, but the departures were small. On the Mediterranean coast temperature was slightly above normal, while elsewhere it was slightly below. Rainfall was everywhere below normal, except in the extreme south of the Sudan. Relative humidity was slightly above normal in Cairo district, but considerably below at Alexandria.

Table showing the Departure from Normal for November 1940.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR NOVEMBER 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean <sup>(1)</sup>	1017.6	+0.4	25.7	+0.7	17.8	+0.6	21.8	+0.6	17	—4
II.—Lower Egypt ...	1017.9	+0.2	25.9	—0.3	12.9	—0.5	19.4	—0.4	5	—2
III.—Middle Egypt ...	1017.9	+0.4	26.3	+0.5	13.2	—0.9	19.8	—0.2	0	—4
IV.—Upper Egypt ...	1017.1	+0.2	27.8	—0.2	13.6	—0.2	20.7	—0.2	0	—
V.—Western Desert <sup>(2)</sup>	1018.4	+0.7	26.6	—1.2	11.2	—0.2	18.9	—0.7	0	0
VI.—Red Sea (Egypt)	1015.4	—0.2	26.5	—0.6	16.4	—0.3	21.4	—0.4	0	—3
VII.—Red Sea(Sudan) <sup>(3)</sup>	1013.0	—0.5	30.8	—0.3	23.5	—0.2	27.2	—0.2	32	—12
VIII.—North Sudan ...	1013.5	+0.3	33.4	—1.0	17.7	—0.4	25.6	—0.7	0	0
IX.—Central Sudan ...	1010.5	—0.3	35.1	—1.0	16.8	0.0	26.0	—0.5	1	0
X.—South Sudan ...	1009.8	—0.7	35.4	—0.3	19.7	+0.1	27.6	—0.1	29	+9

(1) Alexandria and Port Said.

(2) Siwa and Kharga.

(3) Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba fell only one centimetre during the month. Its level on November 1st, 1940 was 38 centimetres, below the normal and 39 centimetres below the corresponding day of last year.

The Bahr el Jebel at Juba was almost steady during the whole month. The levels were half a metre below the normal but few centimetres below those of last year.

The River Sobat at Nasser rose below both the normal and last year's until the end of the month, when it began its characteristic annual fall. The levels were about half a metre below both the normal and those of last year.

The White Nile at Malakal rose few centimetres during the month, the levels were below both the normal and last year's throughout.

The Blue Nile at Roseires was almost steady till the 6th with slight fluctuations, it then fell at normal rate until the 16th when steady levels recurred lasting for four days after which it fell again steadily to the end of the month. The levels in general were one metre below the normal and more than one metre below last year's levels. At Khartoum the River fell rapidly till the 20th and kept almost steady for few days after which it fell again till the end of the month.

The River Atbara at Khashm el Girba started the month with a deep fall amounting to about 75 centimetres until the 3rd, then fell slowly afterwards till the end of the month. The levels were in general much below both the normal and those of last year.

The Main Nile at Kajnarty fell until the 6th ; a slight rise then set in lasting for two days, owing to contribution from Gebel Aulia, after which the levels fell steadily till the end of the month. The levels were continuously below both the normal and last year's.

The difference of the mean levels in October 1940 from those of October 1939 and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	October 1940 minus October 1939	October 1940 minus Normal
	Metre	Metre
Juba ... ..	— 0·15	— 0·51
Nasser * ... ..	— 0·47	— 0·48*
Malakal ... ..	— 0·28	— 0·35
Roseires ... ..	— 1·34	— 0·99
Khartoum ... ..	— 0·92	— 1·37
Khashm el-Girba ... ..	— 0·48	— 0·30
Kajnarty ... ..	— 1·16	— 2·05

\* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

# Ministry of Public Works, Egypt.—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR OCTOBER, 1940

### The Weather

Generally milder than usual, severe thunderstorms and rain-storms in the second week, exceptionally warm during the last week.

From the 3rd to the 7th Egypt was under the influence of low pressure over the northern Red Sea, and northeasterly winds with warm damp weather prevailed. On the evening of the 5th thunder and lightning occurred in Cairo district, and sharp showers of rain fell locally. With decreasing pressure over the eastern Mediterranean the wind backed to northwest on the 7th and an appreciable fall of temperature resulted.

On the 10th pressure over the northern Red Sea and Upper Egypt again began to weaken and the weather in those areas became unsettled to a remarkable degree. Heavy rainstorms accompanied in some places by thunder and lightning were experienced throughout the eastern desert and Upper Egypt as far south as Aswan, the rain being sufficiently heavy to cause a washout on the railway line near Luxor. Subsequently the disturbed conditions spread northward and heavy rain was widespread over the Delta and the eastern part of Egypt. On the 12th 52 millimetres of rain fell at El-Arish,—the largest amount in one day since observations began there in 1907.—On the afternoon of the next day a severe thunderstorm accompanied by large hailstones took place at Tanta, where 27 millimetres of rain fell within two hours, and communications were interfered with. The weather became much cooler and showers were frequent in coastal places for some days.

On the 22nd an extensive depression appeared over the central Mediterranean, giving rise to southerly winds in Egypt where the weather became much warmer.

On the 26th another depression caused southeasterly winds and khamsin conditions to prevail over Lower Egypt. Severe sandstorms occurred for several days in the western desert resulting in general sand haze elsewhere, accompanying a heat wave of exceptional intensity. The temperature in Cairo on the 27th reached 39.5° C (103° F) which is 10° C above the normal value for the time of year; this figure has only once been equalled in October (namely in 1936) during the last thirty years. On the morning of the 31st very thick wet fog occurred throughout Lower Egypt except along the coast.

For the month as a whole the barometric pressure was above normal in all districts except in the central and southern Sudan, while the temperature was everywhere above normal. Rainfall was above normal in Egypt and below normal in the Sudan, especially in the extreme south.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR OCTOBER 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1016.2	+0.4	29.5	+1.1	21.2	+0.6	25.4	+0.8	11	+ 6
II.—Lower Egypt ...	1016.6	+0.3	31.1	+0.6	17.1	+0.7	24.1	+0.6	5	+ 1
III.—Middle Egypt ...	1016.2	+0.4	32.3	+2.1	18.3	+0.7	25.3	+1.4	4	+ 2
IV.—Upper Egypt ...	1015.0	+0.6	34.9	+2.3	19.8	+1.2	27.4	+1.8	5	+ 4
V.—Western Desert(2)	1015.6	—0.3	34.8	+1.6	17.9	+1.5	26.4	+1.6	0	0
VI.—Red Sea (Egypt)	1014.1	+0.7	30.9	+0.7	21.3	+0.9	26.1	+0.8	2	+ 1
VII.—Red Sea(Sudan)(3)	1012.9	+1.1	34.2	+0.4	25.3	+0.6	29.8	+0.5	7	— 6
VIII.—North Sudan ...	1011.2	+0.6	39.7	+1.0	24.2	+1.6	32.0	+1.3	2	0
IX.—Central Sudan ...	1009.5	—0.4	38.3	+0.8	21.8	+1.4	30.0	+1.1	12	— 3
X.—South Sudan ...	1010.2	—0.6	35.6	+1.5	21.6	+0.9	28.6	+1.2	37	—60

(1) Alexandria and Port Said.

(2) Siwa and Kharga.

(3) Port Sudan

L. J. SUTTON,  
Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba was almost steady during the month. Its level on October 1st 1940 was 30 cms. below the normal and 40 cms. below the corresponding day of last year.

The Bahr el Jebel at Juba showed a distinct downward tendency, the levels which were well above the normal by the beginning of the month were much below it by its end. The average level was almost identical with that of last year.

The River Sobat at Nasser rose at almost normal rate, the levels were continuously below both the normal and last year's.

The White Nile at Malakal rose below both the normal and last year's levels throughout the month. At Gebel Aulia regulation started on the 27th and the D.S. levels rose accordingly till the end of the month.

The Blue Nile at Roseires started the month with a big flush bringing the level on the 2nd more than a metre above the normal. The River fell afterwards and fluctuated below the normal for one week, after which a rapid and steady fall set in, bringing the level at the end of the month 1.55 metres below the normal which was the lowest recorded in September during the last 20 years. At Khartoum, however, the fall was checked by the rise downstream Gebel Aulia towards the end of the month.

The River Atbara at Khashm el Girba fell below the normal throughout the whole month. The levels were on the average almost identical with those of last year.

The Main Nile at Kajnarti reached its maximum level on the 3rd when it was a little below the normal, it then fell until the 18th and kept almost steady for one week, after which it fell steadily to the end of the month reaching a level 1.28 metres below the normal. The levels in general were much below those of last year.

The differences of the mean levels in September 1940 from those of September 1939 and from the normal 1906-1935 were :

STATION	MEAN DIFFERENCES OF LEVELS	
	September 1940 minus September 1939	September 1940 minus Normal
	Metre	Metre
Juba ... ..	— 0.03	— 0.35
Nasser * ... ..	— 0.33	— 0.41
Malakal ... ..	— 0.26	— 0.23
Roseires ... ..	— 0.36	— 0.75
Khartoum ... ..	— 0.30	— 0.81
Khashm el-Girba ... ..	+ 0.02	— 0.28
Kajnarti ... ..	— 0.13	— 0.80

\* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

Ministry of Public Works, Egypt.—Physical Department

REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR SEPTEMBER, 1940

The Weather

For the first ten days of the month the weather was unusually cool for the time of year. On the 3rd there were very light showers of rain at several places on the Mediterranean coast of Egypt. On the 13th fresh to strong north-easterly winds prevailed and the weather became much warmer, the heat wave reaching its greatest intensity on the 17th, when the temperature in Cairo reached 40° C (104° F) compared with a normal value of 32° C (90° F). A current of cool air from the Aegean then arrived in Egypt causing a sharp fall in temperature and from the 19th to the end of the month there was little departure from average conditions. Morning mists during this period were frequent.

For the month as a whole the barometric pressure was everywhere above normal except in the Central and Southern Sudan. The temperature was slightly below normal in Egypt, with the exception of Upper Egypt, and appreciably above normal in the Sudan. Rainfall was much below normal throughout the Sudan.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR SEPTEMBER 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1014.4	+1.6	30.0	—0.2	22.3	—0.3	26.2	—0.2	0	0
II.—Lower Egypt ...	1014.8	+1.6	31.9	—0.7	17.4	—1.1	24.6	—0.9	0	0
III.—Middle Egypt ...	1014.4	+1.5	32.6	+0.2	19.1	—0.7	25.8	—0.2	0	0
IV.—Upper Egypt ...	1012.7	+1.3	36.1	+0.7	21.0	—0.2	28.6	+0.2	0	—
V.—Western Desert(2)	1013.6	+1.6	36.0	—0.7	21.2	+0.3	28.6	—0.2	0	—
VI.—Red Sea (Egypt)	1010.9	+1.4	31.9	—0.6	—	—	—	—	0	0
VII.—Red Sea(Sudan)(3)	1009.0	+0.7	37.0	—0.9	26.2	—0.2	31.6	—0.6	0	0
VIII.—North Sudan ...	1009.7	+0.5	41.2	+0.9	25.9	+1.0	33.6	+1.0	drops	— 8
IX.—Central Sudan ...	1009.9	—0.8	36.2	+1.0	22.3	+1.0	29.2	+1.0	41	—34
X.—South Sudan ...	1011.1	—0.5	32.9	+0.2	21.3	+0.6	27.1	+0.4	84	—52

(1) Alexandria and Port Said.

(2) Kharga and Dakhla.

(3) Port Sudan

TABLE SHOWING RAINFALL DATA FOR THE MONTH OF SEPTEMBER 1940

Station	1940	Difference from Normal	Station	1940	Difference from Normal
	m/m	m/m		m/m	m/m
Juba ... ..	27	— 79	Addis Ababa *	—	—
Wau ... ..	144	— 22	Roseires ... ..	92	— 63
Malakal ... ..	91	— 45	Wad Medani ... ..	16	— 43
El-Obeid ... ..	58	— 17	Atbara ... ..	0	— 6
El-Fasher ... ..	32	— 2	Kassala * ... ..	—	—
Khartoum ... ..	1	— 17	Port Sudan ... ..	0	0

\* No readings available.

L. J. SUTTON,  
Director, Meteorological Service.

### State of the River

Lake Albert at Butiaba rose 8 centimetres during the month. Its level on September 1, was 21 centimetres below the normal and 47 centimetres below the corresponding day of last year.

With the exception of a flush on the 11th which exceeded both normal and last year's level, the Bahr el-Jebel at Juba fluctuated slightly during the month and the levels in general were almost normal but above those of last year.

The River Sobat at Nasser rose faster than normal rate during the whole month. The levels were on the average about 40 centimetres below both normal and last year's throughout.

The White Nile at Malakal rose normally. Its levels were below both normal and last year's during the whole month.

At Roseires, on the Blue Nile, the sharp and steady rise which set in during the last month was followed by violent fluctuations reaching to a maximum level of 20.62 metres on the 10th which was 1.62 metres above the normal and 2.42 metres above the corresponding day of last year. Subsidiary peaks gradually decreasing in height occurred thereafter reaching at the end of the month a level below the normal but still above last year's. At Khartoum the river continued its abnormal rise until the 13th when the level was nearly normal but much above that of last year, the levels fluctuated thereafter to the end of the month and were in general below the normal but much above those of last year.

The River Atbara at Khashm el-Girba showed the characteristic violent flushes during the whole month and the levels were above the normal and much above those of last year.

The Main Nile at Wadi Halfa started the month with a rapid fall which lasted till the 8th when the level was the lowest recorded during August since 1916. After this date an exceptional sharp rise set in reaching its maximum on the 16th, and which amounted about 7 metres at Kajarti. The river fluctuated thereafter to the end of the month when the level was below both normal and last year's, and the levels on the average were much below the normal but well above those of last year.

The differences of the mean levels in August 1940 from those of August 1939 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	August 1940 minus August 1939	August 1940 minus Normal
	Metre	Metre
Juba ... ..	+ 0.15	— 0.06
Nasser * ... ..	— 0.35	— 0.39
Malakal ... ..	— 0.31	— 0.20
Roseires ... ..	+ 0.98	+ 0.35
Khartoum ... ..	+ 0.32	— 0.27
Khashm el-Girba ... ..	+ 0.70	+ 0.25
Kajarti ... ..	+ 0.31	— 0.77

\* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*

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# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR THE MONTH OF AUGUST 1940

## The Weather

Throughout Egypt the weather was cooler than usual for the time of year. In lower and Middle Egypt it was the coolest August since 1926.

During the first week a current of relatively cold air from Greece traversed Egypt, causing an appreciable fall in temperature, and light showers near the coast in the west.

From the 10th to the 13th the weather was much warmer, the temperature in Cairo reaching 39° C. (102° F.) on the 13th, but subsequently it was almost continuously below normal for the rest of the month.

During the last week cool air from the Balkans reached Egypt and on the 27th the maximum temperature in Cairo was only 32° C. (90° F.). Very light rain fell in Cairo on the following morning, while there were light showers at Alexandria, Port Said and other coastal places at intervals from the 25th to 28th. At Alexandria light showers occurred on each of these four days.

For the month as a whole the atmospheric pressure was everywhere above normal, while the temperature was below normal in Egypt and slightly above normal in the Sudan. Rainfall in the Sudan was below normal in all districts, though not by large amounts.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR AUGUST 1940

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX. + MIN./2			
	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal	1940	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1011.2	+1.8	30.4	—0.6	23.4	—0.2	26.9	—0.4	0	0
II.—Lower Egypt ...	1011.4	+1.7	32.8	—1.6	19.4	—0.7	26.1	—1.2	0	0
III.—Middle Egypt ...	1011.3	+1.8	34.1	—1.1	21.0	—0.5	27.6	—0.8	0	0
IV.—Upper Egypt ...	1010.2	+1.8	37.1	—1.0	22.7	—0.5	29.9	—0.8	0	0
V.—Western Desert(2)	1012.2	+2.2	37.6	—1.3	21.3	—0.5	29.4	—0.9	0	0
VI.—Red Sea (Egypt)	1008.0	+1.5	33.7	—0.9	—	—	—	—	0	0
VII.—Red Sea(Sudan)(3)	1006.6	+0.7	39.5	—1.2	28.7	—0.1	34.1	—0.6	0	—4
VIII.—North Sudan ...	1009.8	+1.2	39.6	—0.1	25.8	+0.8	32.7	+0.4	36	—6
IX.—Central Sudan ...	1011.7	+0.5	33.2	0.0	21.9	+0.5	27.6	+0.2	128	—21
X.—South Sudan ...	1012.8	+0.6	30.7	—0.6	21.3	+0.8	26.0	+0.1	156	—20

(1) Alexandria and Port Said.

(2) Siwa, Kharga and Dakhla.

(3) Port Sudan only.

TABLE SHOWING RAINFALL DATA FOR THE MONTH OF AUGUST 1940

Station	1940	Difference from Normal	Station	1940	Difference from Normal
	m/m	m/m		m/m	m/m
Juba ... ..	190	+ 57	Addis Ababa *	—	—
Wau ... ..	121	— 88	Roseires ... ..	192	— 30
Malakal ... ..	156	— 28	Wad Medani ... ..	114	— 29
El-Obeid ... ..	87	— 34	Atbara ... ..	67	+ 29
El-Fasher ... ..	52	— 82	Kassala *	—	—
Khartoum ... ..	38	— 37	Port Sudan ... ..	0	— 4

\* No readings available.

L. J. SUTTON,  
Director, Meteorological Service.

May 1901 missing



# Ministry of Public Works, Egypt.—Physical Department.

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR JULY 1941

### The Weather

There were three heat waves, which occurred about the beginning, middle and end of the month.

On the 3rd, 47°C. was registered at Siwa Oasis, while on the 5th 47°C. was reached at Kharga and 45°C. at Minya; these are records for July.

Following cool and rainy weather in Asia Minor, the north-westerly winds brought a rapid fall of temperature in Egypt, the maximum temperature in Cairo falling from 41°C. on the 3rd to 32°C. on the 6th. Cool weather lasted for a week, after which it became steadily warmer until the 18th, when the temperature in Cairo again reached 41°C. North-westerly winds from the Balkans then brought an end to the heat wave, and cool weather with a moderate amount of low cloud continued until the 29th, when the temperature again rose, reaching 41°C. in Cairo on the 31st.

For the month as a whole the barometric pressure was well above normal throughout Egypt and the Sudan, while the temperature was also above normal, but not by large amounts in Lower Egypt. The relative humidity at Helwan was above normal on all but eight days. Rainfall in the Sudan was everywhere considerably below normal.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR JULY 1941

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1010.2	+1.4	30.9	+0.6	23.6	+0.6	27.2	+0.6	0	0
II.—Lower Egypt ...	1010.4	+1.3	34.4	0.0	19.6	—0.1	27.0	0.0	0	0
III.—Middle Egypt ...	1010.6	+1.6	36.4	+0.7	21.4	+0.2	28.9	+0.4	0	0
IV.—Upper Egypt ...	1009.2	+1.2	39.4	+0.9	23.4	+0.3	31.4	+0.6	0	—
V.—Western Desert	1011.4	+1.8	39.5	+0.5	23.8	+1.6	31.6	+1.0	0	—
VI.—Red Sea (Egypt)	1007.2	+1.0	33.7	—0.5	25.3	+0.3	29.5	—0.1	0	0
VII.—Red Sea(Sudan)(2)	1005.9	+0.5	40.0	—0.9	27.3	—0.7	33.6	—0.8	Drops.	—5
VIII.—North Sudan ...	1008.5	+0.4	41.1	+1.6	25.9	+1.2	33.5	+1.4	32	—10
IX.—Central Sudan ...	1011.3	+0.2	35.8	+1.0	23.7	+1.6	29.8	+1.3	78	—45
X.—South Sudan ...	1012.9	+0.5	31.5	+0.1	22.4	+1.8	27.0	+1.0	107	—52

(1) Alexandria and Port Said.

(2) Port Sudan only.

TABLE SHOWING RAINFALL DATA FOR THE MONTH OF JULY 1941

Station	1941	Difference from Normal	Station	1941	Difference from Normal
	$\frac{m}{m}$	$\frac{m}{m}$		$\frac{m}{m}$	$\frac{m}{m}$
Juba ... ..	17	— 98	Addis Ababa *	—	—
Wau ... ..	181	— 9	Roseires ... ..	161	— 24
Malakal ... ..	124	— 49	Wad Medani ... ..	86	— 47
El-Obeid ... ..	65	— 32	Atbara ... ..	3	— 15
El-Fasher ... ..	55	— 52	Kassala ... ..	54	— 36
Khartoum ... ..	70	+ 18	Port Sudan ... ..	Drops.	— 5

\* No readings available.

L. J. SUTTON,  
Director, Meteorological Service.

### State of the River

Lake Albert at Butiaba was steady during the month. Its level on August 1st, 1941, was 28 cms. below the normal and 7 cms. below that of the corresponding day of last year.

The Bahr el Jebel at Juba fluctuated slightly during the month. The levels were below the normal and last year's throughout.

The River Sobat at Nasser rose above the normal and was much above last year's levels during the whole month.

The White Nile at Malakal rose almost identically with the normal and the levels were well above those of last year. At Gebel Aulia, regulation to fill the reservoir started on the 10th, the D.S. levels fell thereafter until the 19th, and rose again to the end of the month.

During the month, the flood conditions have been developed at Roseires on the Blue Nile and the levels fluctuated almost normally but were on the average more than one metre above those of last year. At Khartoum the River rose slightly until the 10th, and owing to Gebel Aulia regulation fell rapidly until the 19th, and rose again steadily to the end of the month.

The River Atbara at Khashm el Girba showed its characteristic violent fluctuations during the month, the levels were much below both the normal and those of last year. The Main Nile at Kajnarty rose steadily above the normal until the 18th, a heavy fall then followed and the level was about 2.5 metres below the normal by the end of the month.

The levels were in general about one metre above those of last year.

The difference of the mean levels in July 1941 from those of July 1940, and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	July 1941 minus July 1940	July 1941 minus Normal
	Metre	Metre
Juba ... ..	— 0.11	— 0.29
Nasser ... ..	+ 1.14	+ 0.42*
Malakal ... ..	+ 0.30	+ 0.06
Roseires ... ..	+ 1.16	+ 0.39
Khartoum ... ..	+ 0.68	— 0.35
Khashm el Girba ... ..	— 0.40	— 0.80
Kajnarty ... ..	+ 0.90	— 0.29

\* Nasser normal is for 1922-1935 only.

M. GHABRIAL,  
*Acting Director, Hydrological Service.*

# Ministry of Public Works, Egypt.—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR AUGUST 1941

### The Weather

Except during the 1st week average summer conditions of weather prevailed.

At the beginning conditions were normal, but a shallow depression formed over Upper Egypt on the 3rd and remained stationary until the 5th. During this period the weather in Egypt was generally warm and damp. The maximum temperature at Helwan reached 41°C. (106°F.) being 6°C. above normal on two successive days the 4th and 5th.

The same figure was registered at Mansourah on the 4th; this was the highest temperature ever recorded in August at this station since observations began in 1927.

The weather was generally oppressive due to the combination of high temperature and high humidity. On the 6th the air in Cairo was extremely damp and oppressive; the wet bulb temperature rose at noon to 26.9°C. but on the following day a current of cool air from the Mediterranean Sea arrived in Egypt, causing a sharp fall in temperature.

Cool pleasant weather was then enjoyed for a week commencing the 10th.

During the remainder of the month the temperatures departed little from average, but the humidity in Cairo was rather high. Thick fog was frequently observed in the Delta during the last week particularly on the 29th when it was accompanied by heavy dew.

For the month as a whole the deviations of the mean atmospheric pressure from normal in Egypt were negligible. In the Sudan the pressure was below normal, On the Red Sea Coast and Central Sudan. The temperature was slightly above normal everywhere except in Lower Egypt and on the Red Sea coast.

The Sudan rainfall was slightly above normal in North Sudan and below normal elsewhere.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR AUGUST 1941

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX. + MIN./2			
	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1009.5	+0.1	31.6	+0.6	24.2	+0.6	27.9	+0.6	0	0
II.—Lower Egypt ...	1009.6	—0.2	34.5	+0.1	20.1	0.0	27.3	0.0	0	0
III.—Middle Egypt ...	1009.6	+0.1	35.8	+0.6	21.8	+0.3	28.8	+0.4	0	0
IV.—Upper Egypt ...	1008.4	—0.1	38.9	+0.8	23.7	+0.5	31.3	+0.6	0	—
V.—Western Desert	1010.3	+0.3	38.4	—0.5	22.7	+0.9	30.6	+0.2	0	—
VI.—Red Sea (Egypt)	1006.9	+0.3	34.2	—0.2	25.3	—0.3	29.8	—0.2	0	0
VII.—Red Sea(Sudan)(2)	1004.8	—1.1	42.3	+1.6	28.5	—0.3	35.4	+0.6	Drops	— 3
VIII.—North Sudan ...	1009.2	+0.1	39.4	+0.9	25.2	+0.7	32.3	+0.8	72	+10
IX.—Central Sudan ...	1010.7	—0.5	33.6	+0.4	22.5	+1.1	28.0	+0.8	141	— 8
X.—South Sudan ...	1012.2	0.0	31.5	+0.2	21.7	+1.2	26.6	+0.7	147	—27

(1) Alexandria and Port Said.

(2) Port Sudan only.

TABLE SHOWING RAINFALL DATA FOR THE MONTH OF AUGUST 1941

Station	1941	Difference from Normal	Station	1941	Difference from Normal
	m/m	m/m		m/m	m/m
Juba ... ..	114	— 18	Addis Ababa ... ..	—	—
Wau ... ..	175	— 33	Roseires ... ..	197	— 25
Malakal ... ..	153	— 30	Wad Medani ... ..	150	+ 7
El-Obeid ... ..	172	+ 50	Atbara ... ..	10	— 28
El-Fasher ... ..	120	— 13	Kassala * ... ..	216	+ 94
Khartoum ... ..	49	— 25	Port Sudan ... ..	Drops.	— 3

\* For thirty days only.

MAHMOUD HAMID MOHAMED,  
A. Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba rose 10 cms. during the month. Its level on Sept. 1st 1941 was 25 cms. below the normal and 4 cms. below the corresponding day of last year.

The Bahr el-Jebel at Juba showed some flushes during the month. The levels in general were much below both the normal and those of last year.

The River Sobat at Nasser rose with a little less than normal rate. The levels were above both the normal and last year's throughout the month.

At Malakal the levels of the White Nile were identical to the normal all the month but were on the average 16 cms. above those of last year.

The Blue Nile at Roseires fluctuated almost normally during the first week of the month. A deep fall then followed with some fluctuations which lasted until the 26 th, when the level was about 1.5 metres below the normal. A rapid rise occurred thereafter which brought the level about 0.5 metre above the normal on the end of the month. The levels, on general, were much below both the normal and those of last year. At Khartoum the River repeated the same features, some days later.

The levels of River Atbara at Khashm el-Girba were, as a whole, the lowest ever recorded during August, with the exception of those of 1913 and 1915.

The Main Nile at Kajnarti started the month with a sharp and steady rise until the 19th then fell until the 28th, when the level was more than 2 metres below the normal, and rose slightly thereafter to the end of the month. The levels were continuously much below the normal and last year's throughout the month.

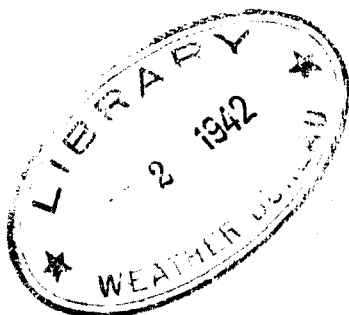
The difference of the mean levels in August 1941 from those of August 1940, and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	August 1941 minus August 1940	August 1941 minus Normal
	Metre	Metre
Juba ... ..	— 0·37	— 0·43
Nasser ... ..	+ 0·55	+ 0·16*
Malakal ... ..	+ 0·16	— 0·04
Roseires ... ..	— 0·89	— 0·54
Khartoum ... ..	— 0·69	— 0·96
Khashm el-Girba ... ..	— 1·10	— 0·84
Kajnarty ... ..	— 0·81	— 1·58

\* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA

*Director, Hydrological Service.*



# Ministry of Public Works, Egypt.—Physical Department

## REPORT ON THE WEATHER AND STATE OF THE RIVER FOR SEPTEMBER 1941

### The Weather

Generally cool but dry ; with the exception of 1920 the humidity has never been as low in Alexandria in September for at least 40 years.

A depression passing north of Egypt on the 1st caused southerly winds and warm weather, the temperature on the 2nd rising to 37° C. in Cairo, but a current of cool air then arrived in Egypt from the west, giving rise to sandstorms in the western desert and a sharp fall in temperature throughout Egypt, while showers occurred at several places in eastern Egypt. At El-Arish 16 mms. were registered, which is an exceptionally large amount for the time of year. The pressure over the eastern Mediterranean remained low for several days, and on the 5th light rain fell along the entire littoral. Unusually cool and dry weather persisted until the 10th, when there was a small rise in both temperature and humidity.

High pressure was established across the east-central Mediterranean to Libia on the 16th, fresh north-east winds prevailed in Egypt, and the temperature rose to a few degrees above normal. On the 19th a small depression passed along the coast, and the temperature at Helwan rose to 38° C. (100° F.), while at Asyût 43° C. (109° F.), or 10° C. above normal, was reached. Within two days however the depression had reached the Syrian coast, and cool north-westerly winds traversed Egypt, light rain falling near the coast. The cool weather persisted for the rest of the month.

For the month as a whole the atmospheric pressure was much above normal throughout Egypt, and slightly below normal in the Sudan, while temperature was below normal in Egypt and above in the Sudan. Rainfall in the central and southern Sudan was much below normal. In Egypt the relative humidity was considerably below normal and there was an almost total absence of morning mists.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR SEPTEMBER 1941

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX. + MIN./2			
	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean <sup>(1)</sup>	1014.6	+1.8	30.0	—0.2	22.4	—0.2	26.2	—0.2	2	+2
II.—Lower Egypt ...	1014.7	+1.4	30.9	—1.7	17.2	—1.3	24.0	—1.5	Drops	0
III.—Middle Egypt ...	1014.4	+1.5	31.9	—0.5	18.6	—1.2	25.2	—0.8	1	+1
IV.—Upper Egypt ...	1012.9	+1.1	35.3	—0.1	20.9	—0.3	28.1	—0.2	0	—
V.—Western Desert <sup>(2)</sup>	1014.5	+1.4	34.7	—1.5	19.8	—0.1	27.2	—0.8	0	—
VI.—Red Sea (Egypt)	1010.5	+0.9	31.3	—1.2	23.4	—0.4	27.4	—0.8	0	0
VII.—Red Sea(Sudan) <sup>(3)</sup>	1008.1	—0.2	38.1	+0.2	26.7	+0.3	32.4	+0.2	0	0
VIII.—North Sudan ...	1009.0	—0.4	40.3	+0.8	25.5	+1.0	32.9	+0.9	24	+3
IX.—Central Sudan ...	1009.9	—0.8	36.2	+1.0	22.4	+1.1	29.3	+1.0	11	—61
X.—South Sudan ...	1011.2	—0.4	33.1	+0.4	21.6	+0.9	27.4	+0.6	114	—22

(1) Alexandria and Port Said.

(2) Siwa, Kharga and Dakhla.

(3) Port Sudan only.

TABLE SHOWING RAINFALL DATA FOR THE MONTH OF SEPTEMBER 1941

Station	1941	Difference from Normal	Station	1941	Difference from Normal
	m/m	m/m		m/m	m/m
Juba ... ..	77	— 28	Addis Ababa ... ..	—	—
Wau ... ..	161	— 6	Roseires ... ..	41	—111
Malakal ... ..	103	— 32	Wad Medani ... ..	6	— 51
El-Obeid ... ..	6	— 68	Atbara ... ..	Drops	— 6
El-Fasher ... ..	1	— 31	Kassala ... ..	50	— 7
Khartoum ... ..	44	+ 26	Port Sudan ... ..	0	0

L. J. SUTTON,  
Director, Meteorological Service.

## State of the River

Lake Albert at Butiaba rose only 3 cms. during the month. Its level on October 1st, 1941, was 30 cms. below the normal but was the same as that of last year.

The Bahr el Jebel at Juba was almost steady during the month. The levels were below the normal, but the average level for the month was about the same as that of last year.

The River Sobat at Nasser rose slower than the normal rate. Its levels were above the normal until the 10th but below it for the rest of the month. On the whole they were about 40 cms. above last year's.

At Malakal, the White Nile also rose at a slower rate than the normal, its levels were below the normal but a little above the last year's.

Since reaching its peak on August 30th, the Blue Nile at Roseires fell steadily until the 11th, then fluctuated until the end of the month. The levels were on the average much below the normal but almost identical with those of last year. At Khartoum the river fell much below both the normal and last year's levels throughout the month.

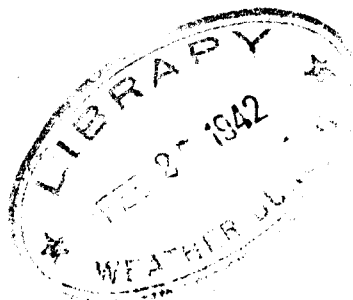
With the exception of the 6th when the River Atbara at Khashm el Girba reached the normal and was a few cms. above last year's level, the river fell steadily and was much below both the normal and last year's level throughout the whole month.

The Main Nile at Kajnarty rose to its maximum level on the 10th when it was one metre below normal and about half a metre below that of last year. The River fell steadily thereafter to the end of the month and the levels were throughout the whole month much below the normal and those of last year.

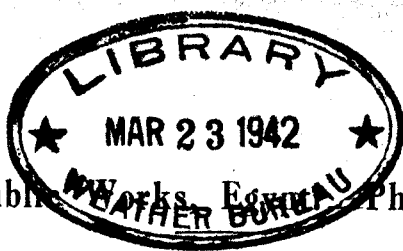
The difference of the mean levels in September 1941 from those of September 1940, and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	September 1941 minus September 1940	September 1941 minus Normal
	Metre	Metre
Juba ... ..	— 0·04	— 0·39
Nasser ... ..	+ 0·38	— 0·03*
Malakal ... ..	+ 0·10	— 0·13
Roseires ... ..	+ 0·01	— 0·74
Khartoum ... ..	— 0·46	— 1·27
Khashm el Girba ... ..	— 0·61	— 0·89
Kajnarty ... ..	— 1·13	— 1·93

\* Nasser normal is for 1922-1935 only.



Y. M. SIMAIKA,  
*Director, Hydrological Service.*



Ministry of Public Works, Egypt Physical Department

REPORT ON THE WEATHER AND STATE OF THE RIVER  
FOR OCTOBER 1941

The Weather

Unusually cool almost throughout, except during the last week.

At the beginning of the month high pressure extended from the Balkans across the east central Mediterranean towards Egypt where dry northeasterly winds prevailed for several days, and the nights were cooler than usual. The formation of a depression over Syria on the 6th. caused the winds to back to northwest and the weather became cooler, while light showers occurred at a few places on the coast on the 10th.

On the 13th. a depression was situated over the Sea of Marmora, with a small secondary off the coast of Egypt in the west. Southerly winds resulted and the weather became warmer, but within two days the secondary has reached northern Syria and cold air from the Balkans arriving in Egypt caused a pronounced fall in temperature, much heavy cloud, and light showers along the coast and at a few inland stations. At Zagazig the night temperature on the 16th., fell to 9 °C, the lowest for October since observations began in 1913. On the 17th. a depression was centred near Crete and southerly winds again resulted, with consequent but small increase of temperature. The passage of this depression to Syria brought cooler weather and rain showers in Lower Egypt but the amounts recorded were everywhere very small. The cool weather persisted until the 27th., when a rather deep depression arrived over Greece and moved towards the Black Sea, while a secondary passed along the eastern Mediterranean. Southerly and easterly winds traversed Egypt, thick morning fogs were widespread, and the weather became much warmer, the temperature in Cairo on the 29th., reaching 35° C; the arrival of another depression over the eastern Mediterranean prolonged and intensified the heat wave, and on the 31st., the temperature in Cairo rose to 37° C, (99° F), or 9° C above the normal for the time of year.

For the month as a whole the barometric pressure was much above normal throughout Egypt and slightly above normal in the Sudan except in the south. Temperature was well below normal in Egypt but above normal in the Sudan. Rainfall was negligible in Egypt, above normal in the central Sudan and about normal in the south. On account of the prevalence of desert winds from the southwest near the coast, except in the east, the air there was very dry, the relative humidity at Alexandria being much below normal on all but six days. In Cairo where desert winds were less frequent it was slightly below normal, and at Helwan it was normal.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR OCTOBER 1941

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal
	m.b.	m.b.	C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean <sup>(1)</sup>	1017.6	+1.8	27.8	—0.6	19.6	—1.0	23.7	—0.8	0	— 5
II.—Lower Egypt ...	1017.6	+1.4	28.6	—1.9	14.4	—2.0	21.5	—2.0	0	— 3
III.—Middle Egypt ...	1017.5	+1.7	29.3	—0.9	15.4	—2.2	22.4	—1.6	0	— 2
IV.—Upper Egypt ...	1016.0	+1.5	31.6	—1.0	17.1	—1.5	24.4	—1.2	0	— 1
V.—Western Desert...	1017.7	+1.8	30.6	—2.7	14.5	—2.2	22.6	—2.4	0	0
VI.—Red Sea (Egypt)	1014.4	+1.0	28.5	—1.7	18.1	—2.3	23.3	—2.0	0	0
VII.—Red Sea(Sudan) <sup>(2)</sup>	1012.0	+0.2	34.6	+0.8	25.0	+0.3	29.8	+0.6	20	+ 7
VIII.—North Sudan ...	1010.8	+0.5	38.8	—0.4	23.5	+0.7	31.2	+0.2	1	— 3
IX.—Central Sudan ...	1009.9	0.0	37.6	+0.1	22.4	+1.7	30.0	+0.9	27	+11
X.—South Sudan ...	1010.7	—0.1	34.4	+0.3	22.1	+1.4	28.2	+0.8	94	— 3

(1) Alexandria and Port Said.

(2) Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

### State of the River

Lake Albert at Butiaba rose 5 centimetres, during the month. Its level on November 1st, was 32 centimetres below the normal but was 6 centimetres above the corresponding day of last year.

The Bahr el Jebel at Juba fell slightly during the month. The levels throughout were below the normal but little above those of last year.

The River Sobat at Nasser rose almost identically with the normal during the month. The levels were continuously well above those of last year.

The White Nile at Malakal rose at a normal rate. The levels were throughout the month, about 25 centimetres below the normal but slightly above last year's.

The Blue Nile at Roseires fell at a normal rate until the 11th., when an abnormal rapid rise set in until the 17 th. The level on that date was 152 centimetres above the normal and about 250 centimetres above the corresponding day of last year. This rise was, however, followed by a rapid fall which lasted until the 24th., the river then rose to another peak on the 27 th., and fell afterwards to the end of the month. The levels in general were much above both the normal and those of last year. At Khartoum, with the exception of the period 19-21 when the levels were almost normal, the levels fluctuated below the normal and much above last year's throughout the month.

The River Atbara at Khashm el Girba fell with less than normal rate.

As a whole, the levels were below the normal but above those of last year.

The levels on the Main Nile at Kajnarti showed a number of fluctuations with a slight tendency to fall. The level which was 240 centimetres below the normal at the beginning of the month was 14 centimetres above it at its end. The levels in general were much below the normal but well above those of last year.

The difference of the mean levels in October 1941 from those of October 1940, and from the normal (1906-1935) were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	October 1941 minus October 1940	October 1941 minus Normal
	Metre	Metre
Juba ... ..	+ 0·15	— 0·36
Nasser ... ..	+ 0·43	— 0·05*
Malakal ... ..	+ 0·12	— 0·23
Roseires ... ..	+ 1·54	+ 0·55
Khartoum ... ..	+ 0·80	— 0·57
Khashm el Girba ... ..	+ 0·20	— 0·10
Kajnarty ... ..	+ 0·65	— 1·40

\* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,  
*Director, Hydrological Service.*



# REPORT ON THE WEATHER AND STATE OF THE RIVER FOR NOVEMBER 1941

## The Weather

The outstanding feature was the remarkably intense heat wave which prevailed during the first week. Record high temperatures for the month were established at nearly all stations throughout the country.

The heat wave began a few days before the end of October, due to the presence of a shallow depression over the western desert associated with a high pressure system extending from Arabia to the Eastern Mediterranean. Very warm south-east winds prevailed over Egypt and the Northern Sudan for several days, and the weather in Egypt became steadily warmer until the 3rd, when the temperature in Cairo reached 40°C. (104°F.), which is 13°C. above normal for the time of year, and is the highest temperature registered in Cairo district in any November since records began at Abbassia in 1869. In fact, the previous November record was exceeded every day for the first week.

The following table gives for selected stations the highest temperature recorded in the month, together with previous records for November, and the normal value of the daily maximum for the time of year :

MAXIMUM TEMPERATURE IN NOVEMBER

STATION	MAXIMUM 1941		PREVIOUS MAXIMUM		NORMAL MAXIMUM
	°C.	Date	°C.	Year	°C.
Alexandria ... ..	35·3	5	35·3	1919	26·6
Port Said ... ..	36·5	7	35·0	1922	26·8
Tanta ... ..	36·7	3,6	36·0	1936	28·4
Cairo ... ..	39·6	3	36·7	1936	28·3
Giza ... ..	38·8	6	37·0	1902	27·6
Helwan ... ..	37·4	6	37·6	1919	27·6
Siwa ... ..	41·0	3	37·5	1939	29·3
Suez ... ..	41·1	1	37·0	1918	29·0
Fayum ... ..	38·6	6	35·9	1936	(29·0)
Minya ... ..	38·8	3	37·5	1919	28·0
Asyût ... ..	39·0	3	39·0	1936	28·4
Qena ... ..	41·0	2	39·0	1936	32·5
Aswân ... ..	40·9	1	41·5	1903	33·6

The depression finally passed on the evening of the 7th and Egypt was then traversed by cool north-west winds, temperatures falling considerably on the following day, when there was dense fog in Cairo district in the morning. On the 9th the temperature in Cairo did not rise above 25° C. ( 77° F. ).

High pressure and settled conditions were established and maintained until the 16th, during which period morning mists frequently occurred in the Delta. On the 17th a depression formed near the coast of Palestine and deepened on the following day. The arrival of north-west winds in its rear brought cool and showery weather in Lower Egypt, but except on the coast the rain was generally light. On the 23rd 15 millimetres were registered at Port Said.

Settled conditions and mild weather followed but on the 27th a depression formed over the Eastern Mediterranean; the depression passed quickly and cool northerly winds from the Balkans reached Egypt and showers occurred in several localities.

For the month as a whole the barometric pressure was slightly above normal in Lower Egypt, and below normal in Upper Egypt and the Sudan, while the temperature was above normal in all districts except the Southern Sudan. Relative humidity in Cairo and Alexandria was much below normal.

Rainfall was everywhere below normal except in the Southern Sudan.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR NOVEMBER 1941

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean (1)	1017·8	+0·6	26·3	+1·3	17·8	+0·6	22·0	+1·0	6	—15
II.—Lower Egypt ...	1017·9	+0·2	27·1	+0·9	13·0	—0·4	20·0	+0·2	1	— 6
III.—Middle Egypt ...	1017·6	+0·1	27·6	+1·8	13·2	—0·9	20·4	+0·4	0	— 3
IV.—Upper Egypt ...	1016·7	—0·2	29·6	+1·6	14·1	+0·3	21·8	+1·0	0	—
V.—Western Desert(2)	1017·9	0·0	28·8	+1·0	11·0	—0·4	19·9	+0·3	0	0
VI.—Red Sea (Egypt)	1015·5	—0·1	27·4	+0·3	16·0	—0·7	21·7	—0·2	0	— 3
VII.—Red Sea(Sudan)(3)	1012·2	—1·3	32·5	+1·4	23·7	0·0	28·1	+0·7	41	— 3
VIII.—North Sudan ...	1011·8	—0·7	35·6	+0·4	19·3	+0·6	27·4	+0·5	0	0
IX.—Central Sudan ...	1009·9	—0·9	35·8	—0·3	18·5	+1·3	27·2	+0·5	1	0
X.—South Sudan ...	1010·1	—0·4	34·6	—1·1	20·1	+0·5	27·4	—0·3	48	+27

(1) Alexandria and Port Said.

(2) Siwa, Bahariya and Kharga.

(3) Port Sudan only.

L. J. SUTTON,  
Director, Meteorological Service.

### State of the River

Lake Albert at Butiaba rose 20 cms. during the month. Its level on December 1st, 1941, was 17 cms. below the normal but was 18 cms. above that of the corresponding day of last year.

The Bahr El Jebel at Juba remained above last year's levels and below the normal during the month.

The River Sobat at Nasser rose above the normal and started its annual fall on the 20th. The level which was identical with the normal on the first day of the month was about 60 cms. above it on its end and was much above last year's level throughout the month.

The White Nile at Malakal rose few cms. and was below the normal during the whole month. The levels were continuously above those of last year.

The Blue Nile at Roseires fell practically at a normal rate during the month, its levels throughout were half a metre above the normal and more than one metre above those of last year. At Khartoum, the River fell more rapidly owing to the completion of filling Sennar Reservoir. The level which was almost normal on the beginning of the month was 45 cms. below it on its end.

The Main Nile at Kajnarti fell almost normally during the month. The levels were about 2 metres above last year's throughout.

The difference of the mean levels in November 1941 from those of November 1940 and from the normal 1906-35 were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	November 1941 minus November 1940	November 1941 minus Normal
	Metre	Metre
Juba ... ..	+ 0·21	— 0·30
Nasser ... ..	+ 1·48	+ 0·24*
Malakal ... ..	+ 0·26	— 0·17
Roseires ... ..	+ 1·05	+ 0·49
Khartoum ... ..	+ 0·84	— 0·17
Kajnarty ... ..	+ 1·87	— 0·04

\* Nasser normal is for 1922-1935 only.

Y. M. SIMEIKA,  
*Director, Hydrological Service.*

## Ministry of Public Works, Egypt.—Physical Department

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### REPORT ON THE WEATHER AND STATE OF THE RIVER FOR DECEMBER 1941

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#### The Weather

Cooler and more unsettled than usual; frequent showers and strong winds near the coast.

At the beginning of the month a depression was situated over the eastern Mediterranean and the weather was cool and showery. With its passage to Iraq, northerly winds prevailed and there was a further fall in temperature, which dropped to  $6^{\circ}\text{C}$ . in Cairo on the morning of the 4th and did not rise above  $18^{\circ}\text{C}$ . during the day, these values being  $6^{\circ}\text{C}$ . below the normal.

Rainfall at El-Arish amounted to 39 mms. in three days. The spell of cool weather lasted until the 9th when a depression arrived over the central Mediterranean and mild southerly winds traversed Egypt, but the warmer weather was of short duration. The wind at Alexandria reached a velocity of 70 kilometres per hour on the evening of the 10th. On the 12th a depression was situated over the eastern Mediterranean and persisted in that region until the 17th. Cool and unsettled weather was experienced during this period, and on the 15th in particular rain was general throughout Lower and parts of Upper Egypt; a strong gale with a wind velocity of 75 kilometres per hour occurred in Alexandria on that morning.

A spell of mild weather lasting until the 21st followed, when another depression reached the eastern Mediterranean and over a period of five days gave rise to low temperatures, strong winds and widespread and heavy rain, which amounted to 51 mms. at Alexandria and 50 mms. at Damanhur. At Tolombat 33 mms. were recorded on the 24th. The wind velocity at Alexandria exceeded 60 kilometres per hour in gusts on five successive days and rose to 80 kilometres per hour in the afternoon and evening of the 24th. After the 26th the weather became gradually milder and less unsettled though light showers occurred in many localities during the rest of the month.

For the month as a whole the barometric pressure was much above normal and the temperature much below normal in all districts, though no record low temperatures were registered. Throughout Lower Egypt rainfall was much above normal. At Alexandria rain fell in measurable quantities on twelve days, and on twenty days in all, the total amount being 87 mms., compared with a normal quantity of 59 mms. At Tolombat 92 mms. were recorded, at Mex 79 mms., at Damanhur 70 mms., at Borollos 67 mms. and at Damietta 64 mms. Frequent morning mists were observed in the Delta and Cairo district, that on the 31st being widespread, persistent and dense, visibility at times being reduced to about 50 metres.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR DECEMBER 1941

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN./2			
	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal	1941	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean <sup>(1)</sup>	1019.6	+1.6	19.2	—1.4	11.8	—0.7	15.5	—1.0	53	+19
II.—Lower Egypt ...	1020.2	+1.5	19.9	—1.6	8.3	—0.5	14.1	—1.0	24	+14
III.—Middle Egypt ...	1020.7	+1.7	20.2	—0.8	8.8	—0.7	14.5	—0.8	3	0
IV.—Upper Egypt ...	1021.2	+2.1	21.7	—1.2	8.1	—0.9	14.9	—1.0	1	—
V.—Western Desert...	1022.2	+2.3	21.5	—1.4	5.7	—0.9	13.6	—1.2	0	— 2
VI.—Red Sea (Egypt)	1019.3	+1.8	21.9	—1.6	11.0	—1.7	16.4	—1.6	3	+ 1
VII.—Red Sea(Sudan) <sup>(2)</sup>	1015.7	+0.6	27.8	—0.6	19.2	—2.2	23.5	—1.4	0	—26
VIII.—North Sudan ...	1016.6	+1.8	29.0	—2.2	12.6	—1.9	20.8	—2.0	0	0
IX.—Central Sudan ...	1014.5	+1.9	31.3	—2.3	12.7	—1.3	22.0	—1.8	0	0
X.—South Sudan ...	1012.9	+2.0	34.7	—1.2	18.7	+0.2	26.7	—0.5	1	— 5

<sup>(1)</sup> Alexandria and Port Said.

<sup>(2)</sup> Port Sudan only.

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### State of the River

Lake Albert at Butiaba rose 12 cms. during the month. Its level on January 1st, 1942, was 2 cms. below the normal but was 40 cms. above that of the corresponding day of last year.

The Bahr el Jebel at Juba was almost identical with the normal during the month. The levels were in general 30 cms. above those of last year.

The River Sobat at Nasser continued to fall at about normal rate during the month, the levels were on the average about one metre above the normal and 3·5 metres above those of last year.

The White Nile at Malakal continued to rise until the 20th, when it started its annual fall. The levels were on the average 11 cms. above the normal and more than one metre above last year's.

The Blue Nile at Roseires fell at a normal rate during the month. The levels were well above those of both the normal and last year's. At Khartoum the River fell below the normal but above last year during the whole month.

The Main Nile at Kajnarty fell more rapidly than normal rate. The level which was 32 cms. below the normal at the beginning of the month was 73 cms. below it at its end. The levels were continuously much above those of last year.

The difference of the mean levels in December 1941 from those of December 1940, and from the normal 1906-35 were :—

STATION	MEAN DIFFERENCE OF LEVELS	
	December 1941 minus December 1940	December 1941 minus Normal
	Metre	Metre
Juba ... ..	+ 0·30	— 0·09
Nasser ... ..	+ 3·44	+ 0·88*
Malakal ... ..	+ 1·17	+ 0·11
Roseires ... ..	+ 0·55	+ 0·23
Khartoum ... ..	+ 0·36	— 0·49
Kajnarty ... ..	+ 0·74	— 0·67

\* Nasser normal is for 1922-1935 only.

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